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Transportation

**PRESERVATION AND PACKING**

## COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFRPD 24-2, *Preparation and Movement of Air Force Materiel*. Proper preservation and packing maximizes the life cycle of materiel during shipment, handling and storage. This instruction promotes continuously improved standard practices, simplified operations, recycling procedures, and environmental awareness. See **attachment 1** for a list of references, abbreviations, acronyms, and terms.

**(AFRC)** The OPR for this supplement is HQ AFRC/LGTT (Capt Eric W. Patrick). This supplement implements and extends the guidance of Air Force Instruction (AFI), 29 June 1994. The AF instruction is printed word-for-word without editorial review. Air Force Reserve Command supplementary material is indicated by "(AFRC)" in boldface type. This supplement describes Air Force Reserve procedures to be used in conjunction with the basic instruction. Upon receipt of this integrated supplement, discard the Air Force Basic.

## SUMMARY OF REVISIONS

This instruction supersedes AFRs 71-1, 71-2, and 71-9. It updates, clarifies, and streamlines previous guidance on preservation and packing practices.

**(AFRC)** This revision incorporates the procedures formerly in AFR 71-9, AFRES Sup 1.

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## Chapter 1

### PACKAGING PROCEDURES

**1.1. Uniform Procedures.** AFJMAN 24-206, *Packaging of Material* (formerly AFR 71-6) establishes uniform procedures for packaging Department of Defense (DoD) materiel. Use Air Force packaging procedures in accordance with AFR 24-2, AFJMAN 24-206, and this instruction.

**1.1.1. Levels of Protection.** DoD established three levels of military preservation and packing: A, B, and C. These levels, defined in AFJMAN 24-206, guide military departments and their suppliers in determining the required protection. [attachment 2](#) provides a table of common applications for the levels of protection.

### 1.2. Responsibilities:

**1.2.1. Air Force Materiel Command (AFMC).** AFMC provides packaging expertise for acquisition and follow-on logistics support of systems, equipment and munitions. AFMC instructions on packaging provide detailed responsibilities of AFMC activities. The Air Force Packaging Evaluation Activity (AFPEA) provides the Department of the Air Force and other DoD activities with packaging engineering and test capability. [attachment 6](#) (formerly included in AFR 71-2) now defines roles and responsibilities concerning the AFPEA.

### 1.2.2. Major Commands (MAJCOM):

- Have adequate facilities, equipment, materials, and qualified personnel to package materials.
- Provide training so that the command has qualified packaging personnel.
- Maintain a comprehensive damage-control program.
- Publish detailed procedures for recovery, retention, reuse, and disposal of packaging materials and containers.
- Stress the control and reuse of specially designed containers and packaging systems.
- Monitor base requests to ALCs for SPI containers to identify potential problems in base packaging and reclamation capabilities.
- Give AFMC packaging design activities details of their container design needs to help AFMC provide the right containers.

### 1.2.3. Base Personnel:

1.2.3.1. Installation commanders designate a senior logistics officer to monitor the base reusable container program (normally, the traffic management officer).

1.2.3.2. The program monitor ensures that all activities that receive, store, issue, or ship government equipment:

- Preserve and pack all items, regardless of condition, to prevent deterioration and damage.
- Implement procedures for recovery, retention, and reuse of packaging materials and containers to ship serviceable and reparable material. Ensure that the packaging function and the receiving or using activity retains and uses active government-owned, long-life

containers (FSC 8140 and 8145) that are not accounted for by supply, engine accounts, or munitions accounts.

- Provide adequate facilities, equipment, materials, and qualified personnel to preserve and pack materials as required by the activities' missions. Ensure the proper training of personnel assigned to the packaging function. (see chapter 7). Provide informal guidance to personnel assigned to nontransportation functions (like maintenance and supply) to maintain an effective base reusable container program.
- Provide adequate storage space for active reusable containers at convenient locations in receiving, maintenance, and transportation.
- Identify procedures and responsibilities for collecting, screening, and storing containers and materials. Ensure that they are separated from refuse and supply pickup sites. Identify procedures for obtaining containers and materials from storage and for screening and disposing of excesses.
- Use AF Form 451, **Request for Packaging Service**, to request local fabrication of SPI containers for shipments without a required SPI pack (see paragraph 3.5.). AF Form 451 must accompany all items turned-in to base packaging activities without prescribed SPI containers. See [attachment 3](#) for guidelines in preparing AF Form 451.
- Maintain an effective damage control program. Require prompt reporting of packaging deficiencies according to AFJI 23-215, *Reporting of Item and Packaging Discrepancies* (formerly AFR 400-54). Investigate reported packaging deficiencies to determine the cause. Correct procedures to prevent recurrence (see [chapter 6](#)).
- Report packaging improvements to increase the efficiency of the base operation. Establish a reusable container working group to meet as needed to coordinate actions, analyze deficiencies, and recommend corrective action (see paragraph 6.8.3.).
- Identify procedures for evaluating deficiencies in the reusable container program. Establish procedures for performing corrective action, including review of AF Forms 451, SFs 364, **Report of Discrepancy (ROD)**, and requests for SPI packs or waivers. **NOTE:** Calculating an overall percentage of reusable containers received or reshipped may not reflect the efficiency of the reusable container program.

**1.2.3.3. (Added-AFRC)** Topics for the reusable container group to consider are:

**1.2.3.3.1. (Added-AFRC)** Corrective action taken on notices identifying items that were processed for shipment without the required reusable container.

**1.2.3.3.2. (Added-AFRC)** Adequacy of item protection during on-base processing when required reusable containers aren't available.

**1.2.3.3.3. (Added-AFRC)** Adequacy and housekeeping in areas designated for reusable container storage.

**1.2.3.3.4. (Added-AFRC)** Indications of negligence in discarding reusable containers and packing materials.

**1.2.3.3.5. (Added-AFRC)** Number of excess reusable containers on-hand and disposition status.

**1.2.4. The Base Reusable Container Program Manager and the Reusable Container Monitor.**

These individuals (or their designated representatives):

- Conduct physical inventories of the work and storage areas (maintenance, supply, transportation) to identify excess reusable containers.
- Determine how to conduct these inventories based on the individual activities.
- Identify excess containers on the Packaging and Crating (P&C) record as to be reused, reissued, or returned to the managing ALC (see paragraphs 3.21. and 3.22.).
- Turn containers in to base supply to provide lateral support to other MAJCOM activities.
- Indicate container type, size, and location on the inventory list.
- Relocate excess containers to the P&C storage location when possible.

**1.2.5. Radiation Safety Officer (RSO).** The RSO has overall administrative responsibility for ensuring the proper receipt, use, storage, and disposal of all radioactive materials in accordance with provisions of TO 00-110N-3 and AFI 40-201, *Management of Radioactive Materials in the Air* (formerly AFR 161-16).

**1.2.6. The Traffic Management Officer (TMO).** The TMO packages, marks, and labels radioactive waste according to TO 00-110N-2, SA-ALC/EME instructions, and the instructions provided by the generator. The TMO also complies with AFJMAN 24-204, *Preparing Hazardous Materials for Military Air Shipment* (formerly AFR 71-4) and Title 49 CFR.

**1.3. Rapid Area Distribution Support (RADS) Assistance .** Get RADS assistance from AFMC/LGTX. AFMAN 23-110, *USAF Supply Manual* (formerly AFM 67-1) specifies types of support, justification, and procedures for requesting this assistance.

## Chapter 2

### PACKAGING OPERATIONS

**2.1. Operations in General.** The size and mission of an activity determines the required size of base packaging facilities and the type, kind, and amount of equipment needed to package material. Locate the packaging areas near the shipping or supply processing area.

**2.2. Facilities.** Each activity must have the basic facilities and equipment to package items that are:

- Opened for periodic inspections.
- Received inadequately packaged for storage.
- Shipped off-base, including redistribution or return of declared excesses and return of repairable items to a TRC.

**2.3. Authorization of Equipment.** Allowance Standards 874, part C, authorizes the cleaning, drying, preserving, packing, and marking equipment authorized for operating base packaging facilities. Authorization and funding for conveyor or other mechanized materials handling equipment are subject to AFMAN 23-110 (formerly AFM 67-1, volume VII, part one) which also explains how to request help in analyzing and recommending improvements in materials handling methods and systems installations.

**2.4. Packaging Line Layout.** Material flows from work station to work station according to the sequence of packaging operations, regardless of the size of the operation and should include:

- An area for receiving, inspecting, and identifying material.
- An administrative and work-process planning area for reference materials, such as technical orders (TO), SPIs, specifications, standards, and related transportation publications.
- A materials storage and supply area for maintaining bench stock packaging supplies and recycled containers (other than unit-stored reusable containers).
- An industrial equipment area for fabricating bags, boxes and crates: for printing labels and tags; and for feeding supplies (like tapes and adhesives) into the packaging line.
- A cleaning, drying, and preserving area.
- A unit packing area large enough to handle variable workloads.
- An area for containerizing and packing oversized material that can't be handled in the unit packing area. This area must contain or be located near the woodworking machinery and be accessible to mechanized materials handling equipment.
- At least one electrostatic discharge (ESD) protective work-station where trained personnel can package sensitive (ESDS) items. This must include a conductive work surface and personnel grounding devices. TO 00-25-234, *General Shop Practice Requirements for the Repair, Maintenance, and Test of Electronic Equipment*, Section VII, contains detailed information about ESD protective work stations. Post signs prohibiting entry of unauthorized personnel and static-producing materials in areas designated for packaging ESDS items.
- An area for hazardous materials, if necessary, depending on the types of materiel handled at the base.

**2.5. OSHA and AFOSH Standards.** Ensure that health and safety standards are consistent with applicable Occupational Safety and Health Act (OSHA) and Air Force Occupational Safety and Health (AFOSH) standards when planning the type and layout of facilities and equipment.

## Chapter 3

### PRESERVING SUPPLY AND EQUIPMENT ITEMS

**3.1. Preservation in General.** All items placed in storage or shipped to another activity must be preserved to prevent deterioration from corrosion, mildew, decay, and mold and to protect from attack by microorganisms, vermin, or rodents. Packaging must prevent damage to items during issue or transfer.

**3.1.1. Selecting the Method of Preservation.** An SPI or TO prescribing a method of preserving a particular item or group of items takes precedence over general guidelines. When you have no specific instructions, use the tables in MIL-STD-2073-1 to select the container and the method of preservation.

**3.1.2. Preserving Items for Shipment or Storage.** When preserving items for shipment or storage:

- Clean and dry all items before applying preservation techniques. Use a cleaning or drying method that does not harm the item.
- Use a preservative, when required, that will not harm the item. For example, do not use petroleum-based preservatives on rubber or fabric products.
- Properly cushion, block, or brace the item in the unit container.
- Ensure that all materials used in cleaning, drying, preserving, wrapping, cushioning, and packing are clean and free from defects.

**3.2. Electrostatic Discharge (ESD) Sensitive Items.** Never handle ESD-sensitive items, regardless of condition, without their protective packaging except at a grounded ESD workstation. TO 00-25-234, Section VII, *Electrostatic Discharge Control*, provides specific guidelines for protecting electrical and electronic parts, assemblies, and equipment. It also contains guidance on ESD protective workstations. SPIs specify packaging requirements for ESD depot reparable. For complete systems "Black Box" items, follow the guidance outlined in TO 25-234, Section VII, paragraphs 7.4.2, 7.5.4.12.4, and 7.5.4.13.2.

3.2.1. Use care in opening ESD items. ESD bags are usually constructed with enough extra material to allow for at least one additional heat seal, thereby facilitating reuse in the maintenance activity.

3.2.2. Identify ESD items by Type Cargo Code 3 on DD Form 1348-1A, **Issue Release/Receipt Document**, and by special interior and exterior markings. These markings may include the yellow sensitive-electronic-device caution label or symbol. You don't need to repackage ESD items packaged before 1 November 1983.

**3.3. Hazardous Materials and Regulated Articles.** Hazardous materials must be preserved, packed, and marked according to the applicable directives specified in paragraph 8.2.4. for hazardous materials and paragraph 8.2.5. for hazardous waste. Unitization procedures in this document do not apply to the materials regulated by AFJMAN 24-204.

**3.4. Repairable Items.** You must give repairable items adequate protection to prevent damage or deterioration during intrabase handling and return shipment to the depot or TRC. When moving repairable items between bases, transport them in the specified SPI pack or equivalent handling device.

**3.5. Obtaining Assistance When no SPI Container is Available.** If an SPI container cannot be fabricated at the base or a SPI container is not available (for instance, lost, damaged, due-in from maintenance (Credit DIFM), take one of these actions in this order:

3.5.1. Obtain a waiver from the managing ALC packaging office authorizing the use of a suitable replacement. Ask them for a deviation number for alternate containers and applicable instructions.

3.5.2. Purchase locally the services or materials needed to fabricate an approved SPI container. Order "fast packs" from GSA or fabricate SPI packs, when required, if the base can make them. Use AF Form 451 when fabricating SPI packs, as outlined in [attachment 3](#).

3.5.3. Acquire the SPI container as a lateral support asset from bases within the same command or the same overseas theater.

3.5.4. Submit a supply requisition to the ALC packaging office for SPI containers that have stock numbers. For SPI containers without stock numbers, send a written request to the ALC packaging office. Include this information:

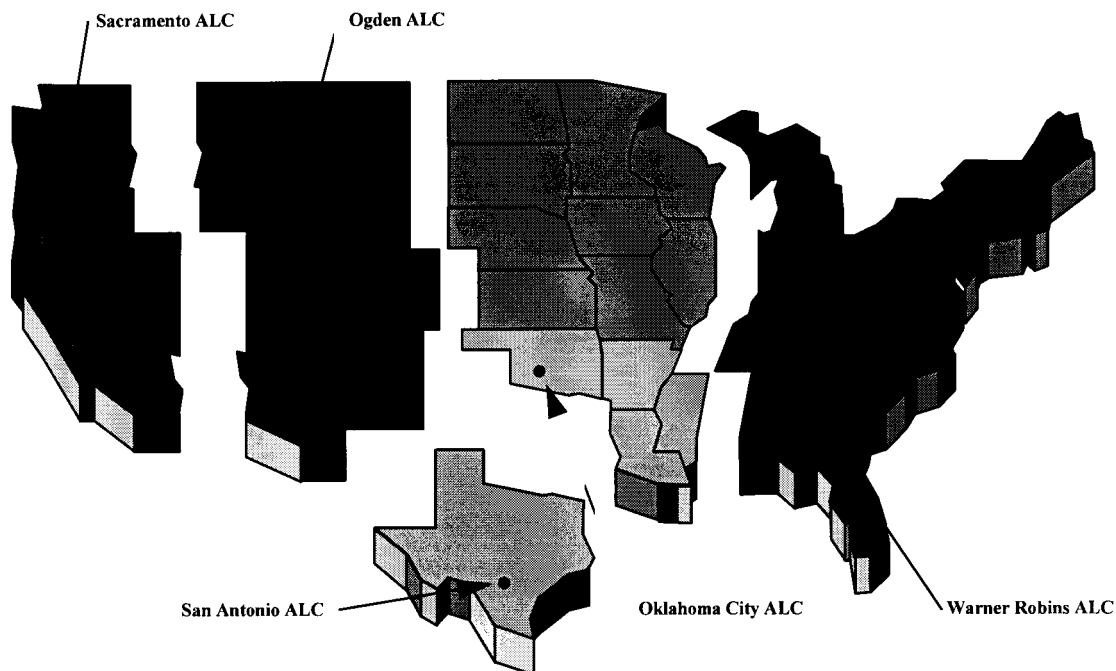
- SPI number.
- Quantity.
- National Stock Number.
- Ship to address.
- Fund cite.
- Intended use (shipment or storage).
- Point of contact, including phone number.
- Squadron level authorizing signature.
- Any other applicable information.

**3.5.4. (AFRC)** When lead time to obtain a special packaging instruction (SPI) is excessive, notify HQ AFRC/LGTT.

3.5.5. The requesting activity is responsible for all material and transportation costs for ALC fabricated containers and/or the total contract cost associated with their fabrication.

3.5.6. AFMAN 23-110 (formerly AFM 67-1, volume I, part two, chapter 2) identifies management responsibilities. For items without an assigned IM, contact the ALC in your geographical area ([figure 3.1](#)).

Figure 3.1. Geographic Area Support Map.



**Points of Contact.:** Contact the managing ALC packaging office at the following DSN numbers:

ALC Packagng Office	DSN Number
Oklahoma City ALC (654 ABG/LGTPL)	339-7969
Ogden ALC (649 ABG/LGTPD)	458-4495
San Antonio ALC (651 ABG/LGTP)	945-6511
Sacramento ALC (652 ABG/LGT)	633-1869
Warner-Robins ALC (653 ABG/LGTP)	468-5007

For help with packaging problems on items being bought for research, development, and test, contact:

Product Center Packaging Office	DSN Number
Aeronautical Systems Center, WPAFB (ASC/ALX)	785-2526
Aeronautical Systems Center, Operating Location, Eglin AFB (ASC/YHC)	872-8184
Space & Miissile Systems Center (SMC/SDC)	876-2371
Electronic Systems Center, Hanscom AFB (ESC/ALX)	478-4646
Space Management Center, Los Angeles AFB (SMC/ALX)	833-5467

**3.6. Packaging Return Shipments.** Cushion, block, and brace each reparable return in an individual pack. Give the item the same degree of mechanical protection it had in the original or replacement part package to prevent further damage.

3.6.1. When feasible, use the replacement part package to repackage the reparable item for return shipment. If a TO or SPI contains packaging instructions, comply with the applicable document.

**3.7. Guidelines for Reusing Containers and Packaging Materials.** To optimize reuse, carefully open and unpack materiel to prevent damage to containers and their components. Do not strip old tapes and labels from a container; it can delaminate (peel the protective layers off) the container. Open flaps by cutting the tape shallowly. Remove all protruding nails, staples, metal strapping, and other sharp metal objects. Put all container parts inside, or attach them to, the container so they don't get lost.

**3.8. Guidelines for Serviceable Containers.** To be serviceable, reusable containers must meet all of these requirements. They must:

- Protect serviceable items against natural and induced environments and physical damage. Protect unserviceable items against further deterioration during return to the TRC.
- Be opened and closed without impairing the container's ability to provide its original level of protection.
- Have all its components and be in good repair.

### **3.9. Categories and Styles of Reusable Containers:**

**3.9.1. Categories.** Reusable containers fall into two categories, depending on the durability of the exterior shipping container and complexity of the design.

**3.9.1.1. Long-Life Containers.** Should withstand at least 100 round trips. These are usually metal, plastic, or synthetic containers, fabricated according to an engineering drawing, and produced by industrial equipment. Base packing and crating sections usually don't have the capability to build long-life containers or the facilities or materials to repair them. NOTE: Slotted angle (MIL-S-21041) crates, covered by NSNs in Federal Supply Classifications (FSC) 8140 and 8145, are long-life containers. Slotted angle containers can be constructed and repaired at base level.

**3.9.1.2. Short-Life Containers.** Should survive at least 10 round trips. These containers are:

- Usually made of plywood, wood, or fiberboard and conform to a military or Federal specification. (See [attachment 7](#).)
- Not subject to AFMAN 23-110 accountability and management procedures once issued for use.
- Consumable and can be disposed of locally when they are beyond economical repair.

3.9.1.2.1. Base packing and crating activities usually have the materials and ability to construct, repair, or renovate short-life containers. An SPI describes the complete container system, including cushioning, die-cuts, inserts, fasteners, and exterior container, with a drawing and a bill of materials.

3.9.1.2.2. GSA stock lists short-life containers for central buying and stocking.

**3.9.2. Styles.** Reusable containers come in two styles, based on use or application. Either container style can be used in constructing long-life or short-life containers.

**3.9.2.1. Specialized Containers.** Specialized containers are generally the long-life variety; they protect a specific item (or a limited variety of items).

3.9.2.1.1. Normally, maintenance activities repair specialized long-life containers and control them as an accountable item of supply.

3.9.2.1.2. Users or packaging personnel repair specialized short-life containers and normally do not stocklist them. However, you may stocklist them in FSC 8110 or 8115 when the volume of use dictates.

**3.9.2.2. Multiapplication Containers.** These containers protect one or more fragile items or items of an unusual size. Short-life multiapplication containers include fast packs and standard packs. PPP-B-1672 and TO 00-85B-3 list the four types of fast packs. MIL-STD-2073-1 describes long-life multiapplication containers and designates them as Types VI through VIII.

**NOTE:** HQ AFMC/LGTP must approve recommendations for adding new multiapplication containers to Air Force packaging systems before you develop or use them. They recommend approved multiapplication containers with potential high use for inclusion in MIL-STD-2073-1.

**3.10. Types of SPI Containers.** SPI containers for Air Force depot reparable and other selected items come in four types:

**3.10.1. Fast Pack SPIs.** Each size and type of fast pack is suitable for shipping a large number of different items within certain limits of size, weight, and fragility. The fast pack has built-in cushioning. Candidates for fast packs include circuit card assemblies and other electronic components.

3.10.1.1. Fast packs may be renovated by replacing unserviceable parts. For example, use serviceable cushioning inserts from worn-out fast packs in other packs that need them.

3.10.1.2. GSA has fast packs for ordering and stocking.

3.10.1.3. TO 00-85B-3 describes fast packs and the fast-pack SPI numbering system. Because fast-pack SPI numbers contain coded data about packaging the item, you need TO 00-85B-3 to determine packaging requirements.

**3.10.2. Standard Pack SPIs.** Standard packs can be reused as received or by reclaiming and reusing their disassembled parts.

3.10.2.1. Appropriate items require less cushioning protection than fast pack items.

3.10.2.2. The cushioning in standard packs varies according to the instruction code in the standard pack SPI number. TO 00-85B-3 explains the codes in standard pack SPI numbers. Because the standard pack SPI numbers contain coded data about packaging data, you need the TO to determine packaging requirements.

**3.10.3. SPI Drawings.** An SPI drawing illustrates packaging requirements for one item or a limited group of items of the same size and shape. For instance, SPI drawings detail special requirements for cushioning, blocking, bracing, and constructing containers.

3.10.3.1. The number for a SPI drawing contains the nine-digit National Item Identification Number (NIIN), preceded by an alpha character, for the first item identified for the pack.

3.10.3.2. Refer to the SPI drawing to manufacture the pack or to package the item.

3.10.3.3. The packaging activity usually files these copies in SPI number sequence.

**3.10.4. Narrative SPIs.** A narrative SPI describes the required packaging by means of written instructions and references to specifications or other procedural documents.

3.10.4.1. Numbers for narrative SPIs consist of the NIIN, preceded by an alpha character of the first item identified for the SPI. Refer to an actual copy of the narrative SPI to manufacture the pack or to package the item.

3.10.4.2. The packaging activity usually files the narrative SPI copies with the SPI drawings.

**3.11. Primary and Alternate Packs.** Drawing or narrative SPIs specify long-life containers. **EXCEPTION:** Plastic star packs, identified by fast pack SPI numbers and already in the system.

3.11.1. Give only one SPI number for each NSN.

3.11.2. For long-life and short-life containers prescribed for the same item, specify them in the same SPI. Call the long-life container the primary pack and the short-life container the alternate pack.

3.11.3. When evaluating use of an alternate foam-in-place pack for a short life application, consider cost effectiveness, availability of the primary pack, and the anticipated logistics cycle.

3.11.4. At ALCs, request long-life containers through supply before you manufacture alternate packs unless you need to manufacture the packs to meet shipping deadlines.

**3.12. Requesting Hard-Copy SPIs.** See [attachment 4](#) for information on requesting hard-copy SPIs and reconciling local SPI files.

**3.13. Requirements for Long-Life Containers.** Decide whether you need a long-life reusable container, either a specially engineered design or a standardized design, depending on the need to protect a given item throughout its lifetime.

**3.14. Selecting and Designing Long-Life Containers.** Follow these procedures when selecting and designing long-life containers:

3.14.1. Query the CDRS (AFJMAN 24-206 [formerly AFR 71-6]) to determine if a design already exists to satisfy the need. MIL-STD-1510 and AFI 24-208, *Obtaining, Storing, and Retrieving Container Design Data* (formerly AFR 71-12) contain instructions on how to use the CDRS. You can also use CDRS to locate surplus long-life containers that might meet your needs.

3.14.2. If the CDRS can't help, give preference to standardized off-the-shelf containers or standard designs that meet the long-life performance requirement. MIL-STD-1367, *Packaging, Handling, Storage, and Transportability Program Requirements* (for Systems and Equipment) provides additional guidance.

3.14.3. If no standardized off-the-shelf container will satisfy the need, contact the managing ALC IM.

3.14.4. Activities must consider the in-house design, prototype, and test and evaluation capabilities of the Air Force Packaging Evaluation Activity (AFPEA) ([attachment 6](#)) before contracting such work out.

3.14.4.1. The AFPEA must review and approve any specifications and statements of work before you procure new long-life container designs.

3.14.5. After selecting a standardized off-the-shelf container or approving a newly designed long-life container, the buying activity must send the design data to ASC/YHC or enter the data into the CDRS data base. Follow the procedures in MIL-STD-1510 for submitting new designs to CDRS.

**3.15. Engineering Responsibility for Long-Life Reusable Containers:**

- 3.15.1. AFMAN 23-110 assigns engineering responsibility to the using systems manager (SM), or the end-article item manager (IM).
- 3.15.2. The acquiring activity oversees testing, engineering, and renovating for surplus FSC 8140 and 8145 containers acquired through the CDRS.
- 3.15.3. AFPEA will, on request, provide engineering design, modification, test, and evaluation of containers identified for reuse.
- 3.15.4. The prime ALC does not purchase, repair, or re-engineer FSC 8140 and 8145 surplus reusable containers transferred to other activities.

**3.16. Controlling Reusable Containers.** Using and packaging activities manage and reclaim empty active containers through the reusable container program described in this instruction.

**3.17. Management Responsibility for Long-Life Containers.** Ogden ALC has class management responsibilities for FSC 8140 long-life containers and Warner Robins ALC for FSC 8145 long-life containers. AFMAN 23-110 prescribes procedures for stock listing, controlling their management, and returning containers to supply when the need for them has passed.

**3.18. Stock Listing Short-Life Containers.** The ALC packaging office works with the SM (or with the appropriate ALC IM for the item) to begin stock listing of short-life containers in categories FSC 8110 and 8115 when all these conditions apply:

- The volume of usage makes it economical.
- They expect the need to continue.
- The pack has multiple applications (like the fast packs discussed in TO 00-85B-3, *How to Package Air Force Spares*).

**3.19. Active Reusable Containers.** Active reusable containers include all containers for which an immediate or projected need exists.

- 3.19.1. When active reusable SPI containers for most depot reparable items are empty, manage them within the reusable container program.
- 3.19.2. Turn in certain specialized long-life, munitions, and engine containers to supply or account for them in munitions or engine accounts.
- 3.19.3. Don't account for containers managed within the reusable container program in special accounts or supply. They are considered part of, and identified to, the item packed inside during shipment and storage.

**3.20. Long-Life Containers not in Use.** Return FSC 8140 and 8145 containers to supply accountability when any of these conditions applies:

- They are not in use.
- You can't identify or anticipate immediate or projected needs.
- You don't manage them in separate accounts (such as engines or munitions).

3.20.1. When using or packaging activities turn in containers to supply, supply reports them to IMs as available for redistribution.

**3.21. Excess Long-Life Reusable Containers.** When an activity generates a local excess over current or projected requirements, identify, segregate, and inspect the condition of long-life containers. (See **paragraph 3.22.2.** for additional guidance.)

3.21.1. Turn in those containers traced to a valid NSN to supply, engine accounts, or munitions accounts, as appropriate, for redistribution.

3.21.1.1. Attempt to trace to an NSN or SPI number any container not cross-referenced to an NSN. You may ask for help from base supply, the ALC packaging office, and the CDRS. Once you identify these containers, process them per paragraph **3.22.1.**

3.21.1.2. Base packaging activities may request help from the ALC packaging office responsible for the SPI (**attachment 4**) when redistributing long-life containers that are not separately accounted for.

3.21.1.3. Because these containers generally are in short supply and may be needed for packing other items on the SPI, base packaging activities should redistribute directly to other Air Force packaging activities.

3.21.1.4. Redistribute containers that are separately accounted for only at the direction of the SM or IM.

3.21.1.5. Don't transfer excess long-life or specialized containers to the Defense Reutilization and Marketing Office (DRMO) unless directed in writing by the ALC IM.

### **3.22. Excess Short-Life Reusable Containers:**

**3.22.1. New Containers.** Report excess new short-life FSC 8110 and 8115 containers for redistribution to other Air Force activities when the quantity or value of the containers justifies the cost of redistributing them.

**3.22.2. Used Containers.** Dispose of used short-life containers and packaging materials above local requirements when it is not economical to reclaim or redistribute them. If a local market will buy waste packaging materials, sale of nonusable excess for recycling is the preferred method of disposal for recycling is preferable to disposal.

### **3.22.3. Excess Consolidation Containers:**

3.22.3.1. Bundle excess used consolidation containers in serviceable condition and return them to the nearest ALC, Air Force, or other service activities with a valid need by opportune airlift or other low-cost transportation.

3.22.3.2. Flatten disposable containers that are not reclaimed before they are placed in refuse receptacles or pick-up sites.

### **3.22.4. Items Inside Reclaimed Containers:**

3.22.4.1. Be sure that containers are empty before you recycle or dispose of them.

3.22.4.2. Return items found in reclaimed containers to the accountable activity.

### **3.22.5. Marking and Identifying Reusable Containers:**

3.22.5.1. Mark the exterior of SPI packs and reusable contractor packs with "Reusable Pack" (except fast packs, standard packs, and long-life FSC 8140 or 8145 containers).

3.22.5.2. Mark the containers only with the word "Fast Pack" and the fast pack code, not with the complete fast pack SPI number. The fast pack code consists of the last three digits of the fast pack SPI number, beginning with an "X."

3.22.5.3. You don't need to mark standard packs with "Reusable Pack" or with the standard pack SPI number.

3.22.5.4. Ensure that ALC and base systems print the SPI number on the DD Form 1348-1A, which provides a convenient record for identifying the item to the SPI and for ensuring the accuracy of the SPI number on the shipping container.

## Chapter 4

### PACKING SUPPLY AND EQUIPMENT ITEMS

**4.1. How To Pack.** Pack single items according to the applicable TO or SPI. When consolidating two or more line items in a single container, place the heaviest or most dense items in the bottom. Avoid packing light, fragile items in the same pack with heavy, rugged items. Arrange the contents of the pack to provide the greatest protection to the interior packages.

**4.2. Guidance Sources for Packing.** An SPI, TO, or other document that provides detailed blocking, bracing, cushioning, and packing guidance for a particular item or category of items takes precedence over general instructions. SPI requirements take precedence over TOs or other documents. If a SPI or TO does not provide specific guidance, use:

- MIL-STD-2073-1, *DoD Materiel, Procedures for Development and Application of Packaging Requirements*, to select the container.
- MIL-STD-1186, *Cushioning, Anchoring, Bracing, Blocking, and Waterproofing, with Appropriate Test Methods*, to these requirements.
- AFPAM 24-209, volume 2, Packing (formerly AFP 71-16) and the TO 00-85 series, which provide graphic details on packing.

**4.3. Uncrated Shipments.** Crate most items to facilitate handling and item protection. A qualified carrier certified to transport uncrated items may ship uncrated those large items that require special handling. Get lists of qualified carriers from Military Traffic Management Command (MTMC) area offices. You may load packaged items in a vehicle partly filled with uncrated items.

**4.3.1. Criteria for Large Items.** Activities may ship large items uncrated if all of these criteria apply:

- The cost of packaging and shipping by other means would cost more than shipping the item uncrated.
- The item is capable of withstanding shipment uncrated. Parts that are highly susceptible to damage must be removed from the major component and packaged properly. Then firmly attach these parts to the unit being shipped before releasing it to the carrier.
- Qualified carriers are available to handle the shipment.
- The item doesn't have a security classification that requires packing or crating to prevent disclosure to unauthorized personnel.
- The item is not hazardous cargo as classified by DOT or other Federal regulatory policy (AFJMAN 24-204).
- DD Form 1387-2, **Special Handling Data/Certification**, accompanies each uncrated shipment, as specified in MIL-STD-129. Annotate the form to indicate that the shipment conforms to the requirements in this paragraph.
- MTMC approves of the shipment, if required by AFJI 24-211, *Defense Traffic Management* (formerly AFR 75-2).

**4.4. Unitizing Cargo .** Pack Air Force cargo into units (unitize) at the source of shipment when practical. The unitization policies in this section do not apply to materials regulated by AFJMAN 24-204.

**4.4.1. Palletized Loads.** Unless otherwise specified, palletize material when:

- Containers do not require skids.
- Quantities to a destination exceed either a total of 250 pounds (112 kilogram[(kg)] excluding the pallet, or a volume of 20 cubic feet (6 cubic meters).
- Container size permits use of one of the pallet patterns of MIL-STD-147, Palletized Unit Loads.

4.4.1.1. Special instructions for specific commodities take precedence over MIL-STD-147.

4.4.1.2. Do not exceed the weight and dimensional limits of MIL-STD-147 on palletized loads.

4.4.1.3. Use the 40- by 48-inch (101.6- by 121.9-millimeter [mm]) pallet with a four-way forklift entry for ease of loading and in support of NATO forces.

4.4.1.4. See Military Traffic Management Command (MTMC) Pamphlet 55-2, *Management and Stuffing of Containers*, for complete palletization requirements in stuffing van-type containers.

4.4.1.5. Keep the height of the vertical center of balance as close as possible to one-half the length of the pallet to obtain maximum use of the pallet with maximum stability for safe handling.

4.4.1.6. For loading 463L pallets, refer to TO 35D33-2-2-2, *Instructions with Parts Breakdown, 463L Air Cargo Pallets, Types HCU-12/E (Brownline Corporation)*, and AFR 76-1 for technical requirements.

**4.4.2. Container Consolidation.** When practical and consistent with DoD 4500.32-R, volume 1, *Military Standard Transportation and Movement Procedures*, March 1987, AFMAN 23-110, and AFI 24-201, consolidate shipments for a single consignee overseas or, when advantageous, to several consignees within the CONUS. The consolidation container must adequately protect contents during shipment. Don't use consolidation to prevent unit packaging. To obtain maximum advantages of consolidation:

4.4.2.1. Restrict total weight and the cubic measurements of the contents so they don't exceed the limits prescribed for the selected container.

4.4.2.2. Assemble loose items or small unit packs of the same stock number into a single unit by bagging, bundling, tying, wrapping, or putting them into a carton, and identifying the contents according to MIL-STD-129 before placing them in the container.

4.4.2.3. Facilitate mechanical handling by placing skids on containers that have a gross weight of 200 pounds (90 kg) or more, or 100 pounds (45.40kg) or more, if the dimensions exceed 48 inches x 20 inches (121.92 cm x 50.80 cm). Use a pallet base on consolidation containers that have a gross weight of 250 pounds (112.50 kg) or more or a gross cube of 20 cubic feet (6 cubic meters) or more.

4.4.2.4. Pack serviceable and unserviceable material separately.

#### **4.5. Levels of Preservation and Packing for Unitized Loads:**

**4.5.1. Levels of Protection for Palletized Unit Loads.** You must sheath palletized unit loads containing Level B or commercial packs for delivery overseas. Supplement the fiberboard sheathing with

a waterproof barrier unless known favorable storage and handling conditions en route to the final destination indicate you don't need to. Don't sheath palletized unit loads containing Level A packs destined for overseas solely for packaging protection. Loads destined for CONUS installations do not require sheathing regardless of packing level.

**4.6. Levels of Protection for Containerized Unit Loads.** After you consider the total distribution network, you may reduce levels of preservation and packing when exterior container dimensions permit shipment in SEAVANS or MILVANS. If you can't use container service, allow the shipper at origin or the military ocean terminals to overpack exterior containers. If you need breakbulk and surface transportation for delivery to the user or you don't know the storage time, storage conditions, or mode of transportation, you must use higher levels of protection. **CAUTION:** Containerized hazardous materials are not air-eligible cargo (see AFJMAN 24-204 and 49 CFR).

## Chapter 5

### MARKING MATERIALS FOR SHIPMENT AND STORAGE

**5.1. Publication MIL-STD-129.** MIL-STD-129, *Marking for Shipment and Storage*, establishes procedures for marking military supplies and equipment for shipment and storage. Specifications, technical orders, drawings, and SPIs may also contain special marking requirements. In all cases except those described in this section, you must comply with MIL-STD-129.

**5.1.1. Multipack Shipments.** Mark all consolidated shipping containers "Multipack." Include level of packing, date of pack, and gross weight and cubic measurements instead of content identification markings. MIL-STD-129 contains marking requirements for multipack shipments including those containing shelf-life or warranty items. Multipacks containing properly packaged ESD sensitive items don't require ESD markings on the exterior multipack container. If a consolidation container contains a unit container marked "FRAGILE," don't put "FRAGILE" labels on the consolidation container unless the gross weight of the consolidation container is 75 pounds (33.75 kg) or less.

**5.1.2. Expedite Shipment Marking.** AFI 24-201 outlines how to identify "expedite" shipments. The Air Force uses two codes to identify these shipments: Code 999 and Not Mission Capable Supply (NMCS) (formerly MICAP). Shipments coded 999 take precedence over all other shipments. While both codes can apply to a single shipment, don't apply NMCS markings if you use 999 marking. Mark each unit in the shipment.

**5.1.2.1. Expedite Labels.** Shipping documents tell you if the shipment is a "999" or an "NMCS" item. Use Optional Forms 80, **999 Label (2" x 2")**, and 81, **999 Label (4" x 4")**, to mark 999 shipments. See AFIND 9 for the sizes of these forms. Use the largest size that space permits. Attach one label on the same side as and next to the address label. Place another label on the opposite side of the container. Mark irregularly shaped units where shippers can easily see the markings. Except when 999 markings apply, use Optional Forms 83, **NMCS (Not Mission Capable Supply) (Label) (3" x 1-1/2")**, and 84, **NMCS (Not Mission Capable Supply) (Label) (3" x 5")**, to identify NMCS shipments. Apply as indicated in this paragraph for 999 shipments.

**5.1.3. Project Code Markings.** Shipping documents also tell you if the item has a project code. Put the project code number in the space provided for it on the shipping label. See AFMAN 23-110 (formerly AFM 67-1).

**5.1.4. Fragile Markings.** When packaging conforms to specified Air Force packaging requirements, you don't need "fragile" markings unless prescribed by a SPI. When packaging does not completely conform to Air Force requirements for a specific item, the shipper must decide whether to use "fragile" markings.

**5.1.5. Marking Component Parts of SPI Containers :**

5.1.5.1. If local units fabricate SPI packs, mark the SPI number on the exterior of the container before shipment.

5.1.5.2. Keep together or mark with the SPI number the component parts of SPI containers that have complex configurations (like die-cuts or special-purpose inserts) in the container.

5.1.5.3. Don't obliterate POP markings from the fast pack containers.

5.1.5.4. Don't mark SPI numbers on:

- Fast pack containers.
- Standard pack containers.
- Their internal components.
- Classified shipments.

**5.1.6. Orientation Markings.** When a shipper must carry a package of restricted articles in an upright position and you must mark it to that effect, use *Dangerous Goods Package Orientation*, to show how the package should be stowed. The label arrows must point up to indicate the top of the package.

**5.1.7. Marking Topheavy Shipments:**

5.1.7.1. To determine when containers or crates require top-heavy marking (in addition to the center of balance requirements of MIL-STD-129):

- Locate the center of gravity (CG) of a uniformly distributed load. To determine the CG, locate the side with the smallest base dimension of either the width (w) or the length (l) of the crate ([figure 5.1.](#) and [figure 5.2.](#)). When the base dimensions of either "w" or "l" are equal ([figure 5.1.](#)), either side will work. On the chosen side, draw diagonal lines from opposite corners. The intersection of the diagonal is the CG of the crate.
- Using the same base dimension used to find the CG, draw an equilateral triangle on the crate. If the CG is within the triangle ([figure 5.1.](#)), the container is within the safe limits for normal handling. If the CG is not within the triangle ([figure 5.2.](#)), the crate is unsafe for normal handling and should be marked "TOPHEAVY."

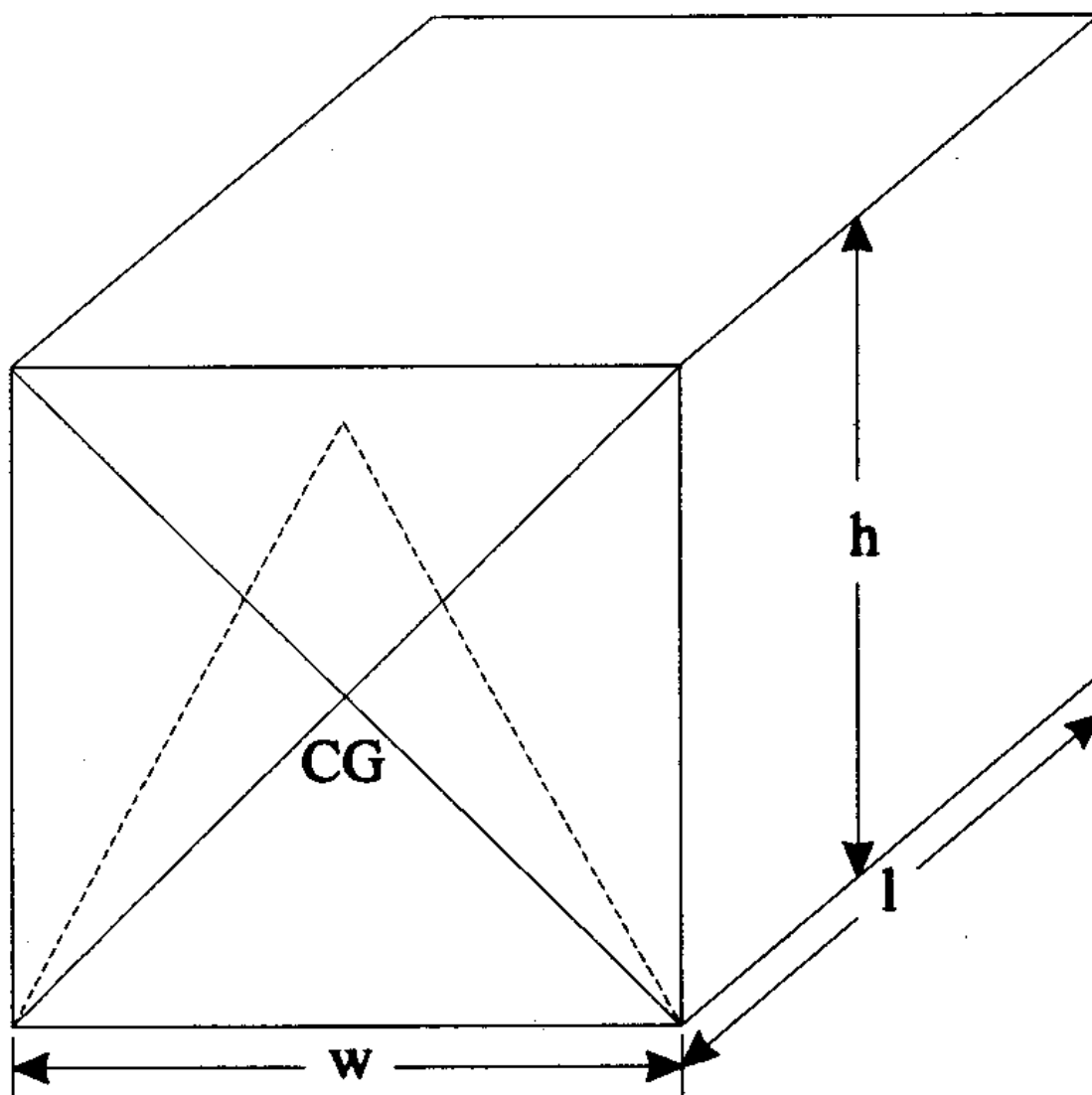
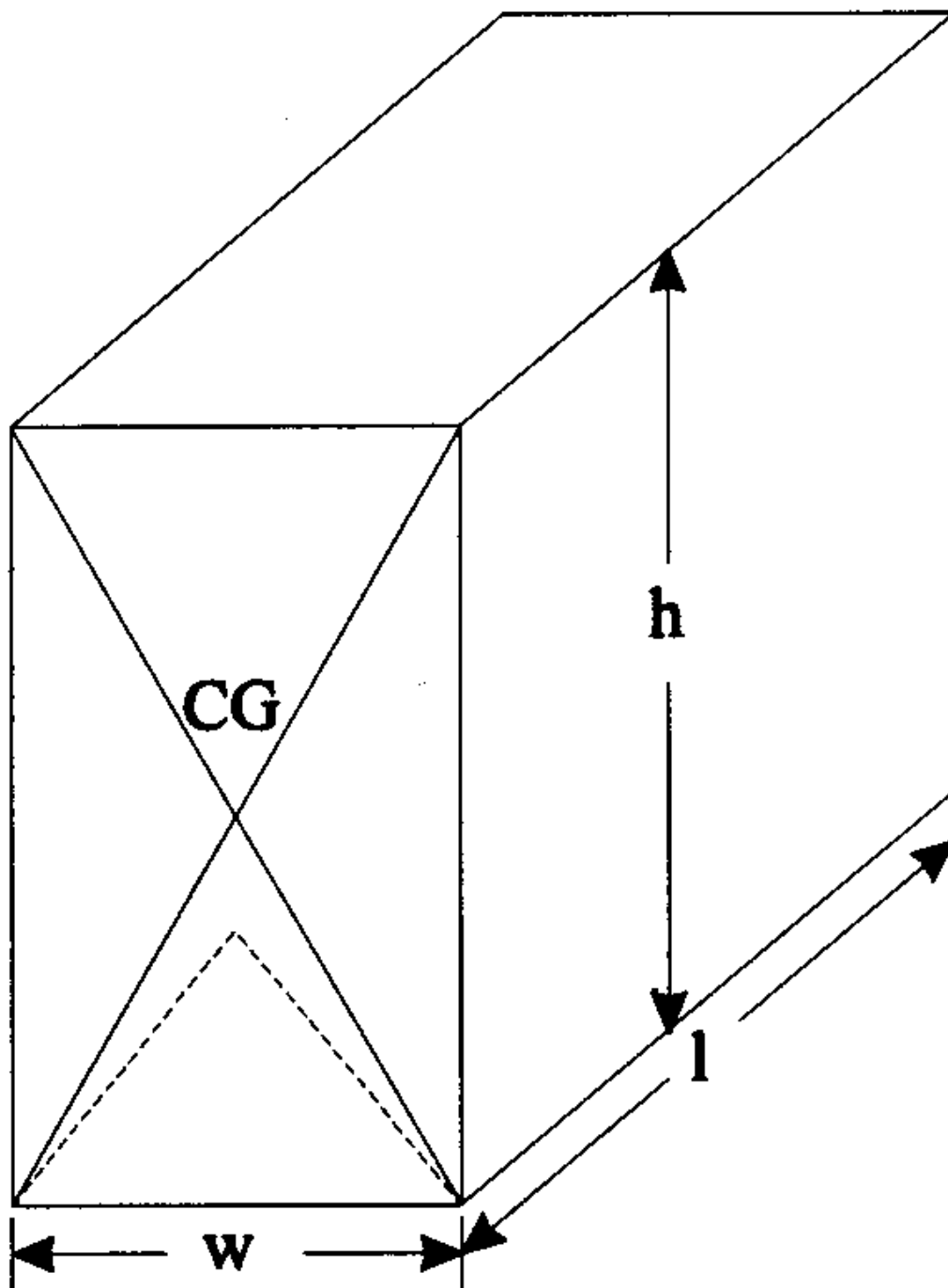
**Figure 5.1. Uniform Load.**

Figure 5.2. Topheavy Load.



**5.1.8. Forklift Entry.** You must use a captive forklift entry on crates that are unsafe for normal handling even when they are marked "TOPHEAVY."

5.1.8.1. For loads you suspect might have a normally high CG (machinery, drill presses, band-saws, wing sections), determine the CG as follows:

- Turn the crate on its side and place it over a pipe. Roll the crate back and forth until you can balance it.
- After you find the CG, mark the crate as "TOPHEAVY." **NOTE:** If the height of the crate is equal to three times the base, you must mark the crate "TOPHEAVY."

## Chapter 6

### PACKAGING DEFICIENCIES, DAMAGE, AND COST CONTROL

**6.1. Inspection.** Inspect items systematically to prevent loss or damage from the time you receive them until you use or dispose of them. Report defects to help the packaging designer eliminate future damage.

**6.2. Responsibilities of the Shipping Activity:**

6.2.1. The shipping activity must package materiel to prevent damage during shipment.

6.2.2. Personnel performing packaging functions must meet minimum training requirements or be supervised by fully trained personnel.

6.2.3. When the shipping activity receives SF 364, **Report of Discrepancy (ROD)**, they must notify responsible persons of deficiencies. They must train their personnel to correct deficiencies.

**6.3. Damage Control in Receiving Activities.** When you receive a shipment, check to:

- Determine if damage occurred during transit.
- Ensure adequate packaging at the proper level to prevent corrosion or deterioration during storage.

**6.4. Procedures for Stored Items.** DoD 4145.19-1-R, *Storage and Materials Handling*, September 1979, includes procedures for inspecting stored items.

**6.5. Damage to Issues.** A major source of damage to delicate items is intrabase transfer. Protect items that are subject to damage from shock and vibration during handling and movement.

**6.6. Discrepancy Reporting.** When you note shipment damage or packaging deficiencies, make the necessary corrections. Report item and packaging discrepancies using SF 364. See AFJI 23-215 and [attachment 5](#) of this instruction for additional guidance.

**6.7. Control Points.** AFJI 23-215 establishes control points for distributing packaging discrepancy reports.

**6.8. Packaging Cost Control.** Major commands must establish procedures to ensure that all bases under their jurisdiction include necessary packaging requirements for all procurements.

**6.8.1. Local Purchase Items.** As a rule, code items bought at base level for local purchase (LP). They are for immediate use. In most cases, the vendor's or manufacturer's standard packaging adequately protects these items; you may use this packaging if it meets DOT requirements and safety standards. Purchasing documents for LP materiel must contain the statement: *"Military packaging is not required."* The packaging provided must protect item to destination to conform with applicable DOT or intrastate regulations. This statement permits rejection of substandard packaging at delivery based on DOT regulations.

**6.8.2. Packaging Economy.** Managers must stress to base personnel the importance of proper packaging and the use of economical packaging techniques that can save significant amounts of money and

at the same time minimize the creation of solid waste. Emphasize this philosophy in command publications and correspondence and during staff visits to the base. Examples of areas where economies and improvements may be put into effect are:

- Reclaiming and reusing packaging materiel and containers.
- Keeping specially designed packs for reshipment or return of items to the using or repair activity.
- Standardizing the number and types of packaging materials bought.
- Ensuring that the unit uses the material for its intended purpose.
- Anticipating longer term requirements for packaging materials so the unit can buy them in larger, more economical quantities.
- Using the lowest acceptable levels of preservation and packing to meet the anticipated logistics cycle.

**6.8.3. Suggestions for Improved Packaging.** Identify improved or more economical packaging methods, materials, and techniques by use of SF 364 reports. When submitting a suggestion recommending an improved pack for a specific national stock number, attach a SF 364 that shows the packaging deficiency referenced and its cause. You may also use the Air Force Suggestion Program.

## Chapter 7

### PACKAGING TRAINING

**7.1. Functional Requirements.** To assure maximum effective use of scarce material resources, each commander must ensure that personnel performing packaging functions related to purchasing, inspection, shipment, and storage operations are trained in Air Force packaging methods and procedures.

**7.2. School of Military Packaging Technology (SMPT).** SMPT, Aberdeen Proving Ground, Maryland, provides military packaging training.

**7.2. (AFRC)** The Installation Transportation Officer ensures individuals assigned packing and crating duties have attended a formal training course.

**7.3. Resident Training.** Courses cover:

- Preservation.
- Packing and unitization.
- Packaging hazardous materials for transportation.
- Packaging design.
- Marking for shipment and storage.
- Foam-in-place packaging.
- Defense packaging for logistics managers.
- Handling ESDS items.

**7.4. SMPT Onsite Training.** The SMPT also offers on-site training courses.

7.4.1. Air Force installations who want to host an SMPT on-site course send their requests through Air Education and Training Command (AETC/TTMS), Randolph AFB TX 78148-5000. Indicate the course and the number of students.

7.4.2. Send annual training requirements to AETC during the survey period for the following fiscal year's training requirements. SMPT conducts onsite training when at least 25 students sign up for training.

## Chapter 8

### SPECIAL PACKAGING CONSIDERATIONS

**8.1. Security Assistance (Foreign Military Sales [FMS] and the Military Assistance Program [MAP]).** Security assistance items, including FMS, are especially susceptible to damage due to unknown and unfavorable transportation, climatic, and storage conditions. Provide Level A/B protection unless the procuring country specifies otherwise.

**8.2. Small Arms and Other Weapons.** Small arms and other weapons and firearms consist of hand-guns, shoulder-fired weapons, light automatic weapons (up to and including .50 caliber machine guns), recoilless rifles (up to and including 106 mm), mortars (up to and including 81 mm), rocket launchers (human portable), grenade launchers (rifle and shoulder-fired), mounted or airborne weapons (up to and including 90 mm), and human operated weapons that have potential use in civil disturbances and are vulnerable to theft.

**8.2.1. Repackaging Small Arms After Inspection or Exercise.** Qualified packaging personnel must do the packaging. They must repackage weapons opened for exercise, or other reasons within 10 days of the exercise. Do not store packaging materials in the weapons storage area.

**8.2.2. Identification Markings for Small Arms.** Include the serial numbers of the pieces according to MIL-STD-129. Apply identification markings to each unit and intermediate container. Attach only DOT identification marking labels and proper shipping names to exterior containers. If inappropriate markings are already applied, obliterate them. Do not attach to the exterior container packaging lists or other documents identifying the contents.

**8.2.3. Parcel Post Shipments.** AFI 24-201 and DoD Postal Manuals govern preparation requirements for parcel post shipments. Envelopes and tape used to seal packages must be capable of absorbing a postmark.

**8.2.4. Hazardous Materials.** Follow the Federal, agency, or departmental documents regulating the mode of transportation. *The Hazardous Materials Information System (HMIS)* provides guidance to personnel responsible for the packaging, handling, and transportation of hazardous materials. TO 11A-1-46, *Firefighting Guidance, Transportation and Storage Management Data and Ammunition Complete Round Chart*, provides guidance on complete round information, hazard classification, firefighting, handling, transportation, and storage data for explosives.

**8.2.4.1. Labeling Hazardous Materials.** Apply the proper hazard label to the outside of the shipping container according to AFJMAN 24-204 and 49 CFR. AFOSH Standard 161-21, paragraph 5d, identifies the labeling requirements required by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**8.2.4.2. Hazardous Materials Information System (HMIS).** Use HMIS as a reference document with, not as a replacement for, existing regulations governing transportation, storage, handling, disposal, and so on. Obtain the HMIS data listing (DoDL 6050.5) from publications distribution offices at all Air Force activities. (See **attachment 8**.)

**8.2.4.3. Management of Hazardous Material Data.** Packaging offices at each Air Logistics Center must complete transportation data sheets for all Air Force hazardous items they manage. See **attachment 8** for additional guidance.

**8.2.5. Hazardous Waste.** Package hazardous waste in containers authorized in AFJMAN 24-204, or 49 CFR. If you do not use a container from one of these documents, you must follow the provisions of DoD 4160.21-M, *Defense Utilization and Marketing Manual*, March 1990, with Change 1. The Individual Generation Site (IGS) is primarily responsible for proper packaging, labeling, marking, and preparing the hazardous waste manifest.

**8.2.5.1. Labeling Hazardous Waste Shipments.** The packaging activity must mark hazardous waste shipments as specified in 49 CFR, part 172, subpart E; 40 CFR, part 262, subpart C; MIL-STD-129; and 40 CFR, part 262, subpart C (for hazardous waste shipments to California, New Jersey, and Pennsylvania).

**8.2.5.2. Manifest.** The IGS prepares a uniform Hazardous Waste Manifest on EPA Form 8700-22/22A or an applicable State Hazardous Waste Manifest for all hazardous waste shipments to be transported over public highways. The 40 CFR, part 262, appendix, *Uniform Hazardous Waste Manifest and Instructions*, gives detailed instructions for completing the form.

**8.2.5.3. EPA Identification Number.** Assign an EPA identification number to all hazardous waste shipments as specified in 40 CFR, part 262, subpart A.

**8.2.5.4. Hazardous Waste Record-Keeping and Reporting.** Maintain records and reports as required by 40 CFR, part 262, subpart D, and the installation's *Hazardous Waste Management Plan*.

8.2.5.5. DRMOs must maintain records on material for which they have manifesting responsibility.

#### **8.2.6. Radioactive Waste:**

8.2.6.1. The activity that generates the waste, with the installation radiation safety officer (RSO), initiates a written request for radioactive waste disposal instructions as specified in TO 00-110N-2, *Radioactive Waste Disposal*.

8.2.6.2. The TMO must comply with AFJMAN 24-204, and Title 49 CFR when transporting radioactive waste.

8.2.6.3. Under no circumstances may you ship radioactive waste unless specifically authorized by SA-ALC/EME, Kelly AFB TX 78241-5000.

#### **8.3. Using Preservative-Treated Wood:**

8.3.1. Generally, treat lumber and plywood with a wood preservative only when a favorable tradeoff in container life expectancy can justify its use and you expect to store the container in the open for greater than:

- Twelve months in tropical or subtropical regions (including the CONUS Gulf states).
- Twenty-four months in temperate climates with normal rainfall (including CONUS Midwestern, Eastern, and Northwestern states).
- Thirty-six months in arid areas (including CONUS Southwestern states).

8.3.2. Preserve lumber and plywood used to manufacture or fabricate containers and container accessories (skids, pallets, and rubbing strips) as specified in TT-W-571, *Wood Preservation, Treating Practices*. Use only Composition C and D of TT-W-572 and 3 percent Zinc Napthenate as wood pre-

servatives. Consider using preservative-treated wood rather than untreated wood for the following containers and accessories:

- Reusable containers of wood construction or containing wood members.
- External wood members of metal, plastic, and fiberglass containers.
- Wood members of open crates, including blocking, bracing, and mounting devices.
- Wood members of wood and plywood containers and sheath crates.
- Skids, pallets, and rubbing strips, even when used with nonpressure-treated containers.

8.3.3. When cutting preservative treated wood, use a bioenvironmentally approved ventilation system to prevent irritation from the sawdust.

8.3.4. Ensure that personnel handling wood products treated with Pentachlorophenol (penta) and showing signs of penta crystals use nitrile rubber or polyvinyl chloride gloves and chemical goggles.

8.3.4.1. If personnel discover that penta treated items like boxes, pallets, and crates have crystals or blooms, remove, repackage, and return the contents to service using noncontaminated materials. Overpack the contaminated material in metal drums or wrap it in heavy plastic and report it as hazardous waste.

8.3.5. Do not ship or store foodstuffs in preservative-treated wooden containers.

**NOTE:** Wood products preserved with Composition C or D of TT-W-572 or 3 percent Zinc Napthenate do not have national stock numbers (NSN). Order treated lumber by using standard stock numbers with an added stipulation on the purchase order. For example, a purchase order for 2 by 4 (lumber), NSN 5510-00-220-6194, must also include a stipulation that the wood, to be used under moderate weathering conditions, be treated as specified in TT-W-571, using Composition C or D of TT-W-572 or 3 percent Zinc Napthenate. Include such data in applicable TOs and SPIs if you are specifying treated lumber.

**8.4. Protecting Metallurgical Failure Exhibits.** DD Form 2332, **Product Quality Deficiency Report Exhibit**, must accompany such exhibits. Don't let the packaging and handling prevent accurate metallurgical failure analysis. These rules apply:

- Don't clean or apply acid to the fracture except for exhibits shipped from overseas. Clean exhibits from overseas activities only when necessary to satisfy public health requirements. Take care to prevent damage to evidence during cleaning. Foreign products on the fracture may aid analysis.
- Don't touch the fracture face with fingers, tools, or instruments.
- Protect the fracture face from the environment, particularly where corrosion can occur. Do not apply preservatives to the fracture face; they could interfere with analysis.
- Store the item in a desiccated, water-vapor-proof bag, fabricated from MIL-B-131 barrier material or equivalent. Seal the bag airtight. Include only one item per water-vapor-proof bag.
- If the exhibit is shipped intact rather than in parts, ship only the exhibit item in the container.
- If the item is bent or broken, use a shipping container large enough to prevent rearranging or disturbing the bent or broken area.

- Pack items to prevent damage to the exhibit evidence during shipment. If you pack more than one exhibit in a single container, be sure to use cushioning or wrap to prevent contact between each exhibit.

**NOTE:** TO 00-35D-54, USAF Materiel Deficiency Reporting and Investigating System, contains further guidance on protecting metallurgical failure exhibits and marking exhibits for material deficiency reports.

## **8.5. Items in a Mobility Readiness Spares Package (MRSP):**

8.5.1. Give War Reserve Materiel (WRM) level A/A protection (see attachment 2), unless the IM (packaging office) specifies otherwise.

8.5.1.1. These requirements, or those specified by the IM, apply even when the packaging activity packs the items for deployment within kits or mobility bins.

8.5.1.2. Keep depot reparable WRM in complete SPI packs to ensure protection during deployment and to provide packs for return of reparables from deployed sites.

8.5.2. You don't need to stock packaging materials as WRM.

8.5.2.1. Oversea bases may maintain up to a 90-day level of bench stock of packaging materials, based on current usage.

8.5.2.2. Each base must maintain at least a 30-day supply.

8.5.2.3. The MAJCOM may approve storage of additional materials at the base or within the region.

JOHN M. NOWAK, Lt General, USAF  
DCS/Logistics

**Attachment 1****GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS*****References***

This section lists publications containing instructions and guidance for packaging Air Force supplies and equipment. Packaging personnel must have a working knowledge of the procedures provided by these documents. MAJCOMs must supply current issues of these packaging publications to the base packaging operations. The DoD Index of Specifications and Standards (DoDISS) lists the current issue of specifications and standards. **NOTE:** The user of this instruction is responsible for verifying the currency of the cited documents.

AFJMAN 24-204, *Preparing Hazardous Materials for Military Air Shipment* (formerly AFR 71-4). AFJMAN 24-204 provides instructions to ensure that hazardous materials are packaged, marked, labeled, and prepared properly for shipment aboard military aircraft.

MIL-P-116, *Methods of Preservation*. MIL-P-116 defines and establishes the requirements for cleaning and drying and describes the basic methods of preservation.

MIL-STD-129, *Marking for Shipment and Storage*. MIL-STD-129 establishes container marking and labeling requirements.

MIL-STD-2073-1, DoD Materiel, *Procedures for Development and Application of Packaging Requirements*. MIL-STD-2073-1 contains procedures for determining the proper method of preservation and for selecting the proper interior and exterior container.

TO 00-85-3, *Corrosion Control for Packaging*. TO 00-85-3 provides technical guidance for the procedures involved in cleaning, drying, preserving, wrapping, cushioning, and placing the item in the unit container.

TO 2J-1-18, *Corrosion Control of Gas Turbine Engines*, and TO 2R-1-11, *Corrosion Control of Reciprocating Aircraft Engines*. These TOs provide instructions for preserving and preparing turbine and reciprocating engines for shipment.

TO 00-85-37, *Foam-in-Place Packaging*. TO 00-85-37 explains techniques and gives guidelines for the application of foam-in-place packaging.

TO 00-85B-3, *How To Package Air Force Spares*. TO 00-85B-3 provides guidance for packaging items, usually depot reparable, assigned to a fast pack or standard pack. It also explains the fast pack and standard pack SPI numbering systems.

TO 00-110N Series. These TOs apply to the receipt, use, storage, packaging and disposition of radioactive materials. TO 00-110N-2, *Radioactive Waste Disposal*, provides instructions for the disposal of radioactive waste.

***Abbreviations and Acronyms***

**AETC**—Air Education and Training Command

**AFI**—Air Force Instruction

**AFJI**—Air Force Joint Instruction

**AFJMAN**—Air Force Joint Manual

**AFMAN**—Air Force Manual

**AFMC**—Air Force Materiel Command

**AFMCI**—Air Force Materiel Command Instruction

**AFPD**—Air Force Policy Directive

**AFPEA**—Air Force Packaging Evaluation Activity

**AFR**—Air Force Regulation

**CADS**—Computer Aided Design System

**CDRS**—Container Design Retrieval System

**CFR** - Code of Federal Regulations

**CG**—Center of Gravity

**cm**—Centimeter

**CONUS**—Continental United States

**DIFM**—Due-in From Maintenance

**DLA**—Defense Logistics Agency

**DoD**—Department of Defense

**DoDISS**—DoD Index of Specifications and Standards

**DoDL**—DoD Listing

**DOT**—Department of Transportation

**DRMO**—Defense Reutilization and Marketing Office

**EPA**—Environmental Protection Agency

**ERRC**—Expendability, Recoverability, Reparability Category

**ESD**—Electrostatic Discharge

**ESDS**—ESD Sensitive

**FIP**—Foam-in-Place

**FMS**—Foreign Military Sales

**FSC**—Federal Supply Classification

**GSA**—General Services Administration

**HMIS**—Hazardous Materials Information System

**ID**—Inner Dimensions

**IGS**—Individual Generation Site

**IM**—Item Manager

**kg**—Kilogram

**LP**—Local Purchase

**MAJCOM**—Major Command

**mm**—Millimeter

**MRSP**—Mobility Readiness Spares Packaging

**MTMC**—Military Traffic Management Command

**NATO**—North Atlantic Treaty Organization

**NIIN**—National Item Identification Number

**NMCS**—Not Mission Capable Supply

**NSN**—National Stock Number

**OD**—Outer Dimensions

**OF**—Optional Form

**OSHA**—Occupational Safety and Health Act

**P&C**—Packing and Crating

**PC-POP**—Personal Computer-Performance Oriented Packaging

**POP**—Performance Oriented Packaging

**RIC**—Routing Identifier Code

**ROD**—Report of Discrepancy

**RSO**—Radiation Safety Officer

**SBSS**—Standard Base Supply System

**SF**—Standard Form

**SM**—Systems Manager

**SMPT**—School of Military Packaging Technology

**SNUD**—Stock Number User Directory

**SPI**—Special Packaging Instruction

**TA**—Table of Allowance

**TMO**—Traffic Management Office

**TO**—Technical Order

**TRC**—Technology Repair Center

**UMMIPS**—Uniform Materiel Movement and Issue Priority System

**WRM**—War Reserve Materiel

### *Terms*

**Commercial Packaging**—The packaging methods and materials normally used by the commercial supplier.

**Container Design Retrieval System (CDRS)**—A computer application located at ASC/YHC, Eglin AFB FL. It provides a DoD centralized data base for storing, retrieving, and analyzing container designs. Using CDRS avoids duplication of specialized container designs and promotes reuse. Military Standard (MIL-STD) 1510, *Container Design Retrieval System, Procedures for Use*, and AFI 24-208, *Obtaining, Storing, and Retrieving Container Design Data* (formerly AFR 71-12) govern the CDRS.

**Corrosion**—Deterioration of material due to electrochemical or chemical attack resulting from exposure to natural or induced environmental conditions or from the destructive attack of fungi or bacteria.

**Damage**—Breakage, denting, marring, distortion, displacement, or abrasion of an item. The term also applies to the malfunction or inaccuracy of an item having mechanically, electrically, or electronically functioning parts or requiring calibration.

**Deterioration**—The impairment of an item's quality, value, or usefulness.

**Electrostatic Discharge (ESD)**—A transfer of electrostatic charge between bodies at different electrostatic potentials, caused by direct contact or induced by an electrostatic field. Very damaging to electrical components.

**Electrostatic Discharge Sensitive (ESDS) Items**—Parts or assemblies that are sensitive to ESD damage.

**Fast Pack**—A family of standard size, short-life, reusable, cushioned containers. Fast pack design permits shipment of a large number of different items within certain limits of size, weight, configuration, fragility, and environmentally sensitive characteristics. See TO 00-85B-3, *How to Package Air Force Spares, and Specification PPP-B-1672, Boxes, Shipping, Reusable with Cushioning*.

**Foam-in-Place (FIP) Packaging**—The process for making foam cushions, blocking, and bracing by combining two or more liquid urethane components. The foam expands 30 to 100 times its original volume and encapsulates an article to protect it on all sides. The foam conforms to all shapes and contours of an item while in the semifluid condition before solidifying. Barrier material is protects critical surfaces from expanding foam. See TO 00-85-37, *Foam-in-Place Packaging*.

**Hazardous Material or Regulated Article**—A substance or material that the Secretary of Transportation has determined to be capable of posing unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. This includes all items listed as hazardous in Title 49, Code of *Federal Regulations (CFR)*, and AFJMAN 24-204.

**Hazardous Waste**—Any material that is subject to the hazardous waste manifest requirements of the Environmental Protection Agency (EPA) specified in 40 CFR, part 263, and as defined in 40 CFR 261.3.

**Packaging**—Preparing materiel for distribution, transportation, storage, and delivery to the user. The term includes preservation, packing, marking, and unitizing.

**Packing**—Selecting and constructing the shipping container and assembling the items or packages in it.

**Preservation**—Applying protective measures to prevent deterioration, including cleaning, drying, and using preservatives, barrier materials, cushioning, and containers, when necessary.

**Reparable (Repairable) Item**—An item that can be reconditioned or economically repaired for reuse

when it becomes unserviceable. Identify depot-reparable Air Force items:

- On the shipping document with the Expendability, Recoverability, and Reparability Category (ERRC) Codes C, S, or T or by ERRC designators XD1, XD2, or ND2.
- On the package with a material condition tag or label.

**Reusable Container**—A shipping and storage container:

- Designed for reuse without impairment of its protective function.
- Designed to be used, reclaimed, and reused as a complete system, with the possible exception of the wrap or barrier material.
- That can be repaired and/or refitted.
- Designated as long-life (100 round trips) or short-life (10 round trips.)

**Scrap**—Wood and fiberboard packaging materials and containers for which the cost of recovery exceeds the value to the government for reuse.

**Special Packaging Instruction (SPI)**—Formerly Transportation Packing Order (TPO). Detailed packaging instructions, usually in a drawing or narrative form, used to construct packages for items requiring special preservation and packing. Normally, SPIs are prepared on DD Form 2169, **Special Packaging Instructions** (MIL-STD-2073-1). A drawing SPI generally includes details for special blocking, bracing, cushioning, shock mounts, tiedown devices, and positioning of the item in the pack. A narrative SPI describes the pack with words and packaging material specification numbers. A SPI numbering system (described in TO 00-85B-3) rather than narrative or drawing SPIs identifies fast packs and standard packs.

**Standard Pack**—A pack for which the method of preservation, packaging materials, and the shipping container, have been standardized. Generally, items chosen for standard packs require less cushioning than those that need fast packs. See TO 00-85B-3.

**Technology Repair Center (TRC)**—An Air Force facility designated to repair, modify, or otherwise process a specific item of equipment.

**Unitization**—Consolidating or otherwise binding unit, intermediate, or exterior packs onto a pallet or load base so that the distribution system can handle the multiple-package load as a unit.

## Attachment 2

**LEVELS OF PACKAGING PROTECTION RECOMMENDED BY THE AIR FORCE**

**A2.1.** Consider these factors when determining the requirements for protecting individual assets ([table a2.1.](#)):

- Intended use (immediate use or storage).
- Destination (CONUS or overseas).
- Mode of movement (air or surface).
- Projected storage type (indoor or outdoor) and known weather patterns (extreme heat, cold, rain) that may affect asset serviceability.

**A2.2.** In addition, the Packaging Specialist may draw on personal expertise or any other available technical information.

**A2.3.** Package retrograde materiel (serviceable or unserviceable) to maintain the degree of serviceability of the materiel being returned.

**Table A2.1. Air Force Recommended Packaging Levels of Protection.**

Assets	PRES	PACK
Security Assistance Grant Aid (Unless Otherwise Directed by Country) Foreign Military Sales	A	B
War Reserve Materiel	A	A
War Reserve Materiel (<=25 LBS and <= 1 CU')	A	B
Delivery to Wholesale Depot Stock; CONUS Indoor Storage	A	C
CONUS; Overseas Not Mission Capable Supply (NMCS); Items Coded 999 and 777	C	C
CONUS; Overseas Outdoor Storage	A	A
Overseas Air Movement	A	B
Overseas Covered Storage	A	B
Overseas Surface Movement	A	A

**NOTE:** PRES: Preservation level of protection; PACK: Packing level of protection.

## Attachment 3

## PROCEDURES FOR COMPLETING AF FORM 451, REQUEST FOR PACKAGING SERVICE

**A3.1. Instructions for Completing AF Form 451.** You may fill out AF Form 451 by hand. The guidance in this attachment corresponds to the numbers shown on the sample AF Form 451 in [figure a3.1.](#) This form is not yet available.

**Figure A3.1. AF Form 451, Request for Packaging Service.**

<b>REQUEST FOR PACKAGING SERVICE</b>		DATE 27 Jan 94	PRIORITY Routine	REQUEST NO. 0014
TO: 645 TRNS/SQD		FROM: 4950 OMS LTS/LGHSK		
SHIPPING DOCUMENT NO. FB23002057X001XXX		ISSUE DOCUMENT NO. FB230030420187XXX		
<i>Request the following packaging materials be procured. I understand special boxes are not to be requested when standard boxes can be used. I have tried to secure reusable containers as prescribed in AFR 71-9.</i>				
REASON FOR REQUEST		ITEM REQUESTED		
<input type="checkbox"/> CONTAINER DESTROYED BY USER		<input checked="" type="checkbox"/> TPO PACK	<input checked="" type="checkbox"/> CRATE(s)	
<input type="checkbox"/> ITEM ISSUED WITHOUT PROPER CONTAINER		<input type="checkbox"/> BOX(es)	<input type="checkbox"/> SKID(s)	
<input type="checkbox"/> ITEM DUE OUT-REPLACEMENT NOT RECEIVED		SPECIFICATIONS		
INITIAL REQUIREMENT		QUANTITY 1	UNIT 1	SPEC/TPO NO. 0018746
OTHER (Specify) <input checked="" type="checkbox"/> Item removed from burned aircraft.		NOMENCLATURE MOTOR ALTERNATING C		
PURPOSE		NSN 6850011444298AU		
<input type="checkbox"/> DOMESTIC		LENGTH 22 5/8"		
<input type="checkbox"/> EXPORT SHIPMENTS		WIDTH 14 1/2"		DEPTH 7"
<input checked="" type="checkbox"/> STORAGE		SIGNATURE OF REQUESTER <i>Michael Scott</i>		
BLDG NO. 152 Area C		PHONE NO. 77873		
FOR USE BY PACKAGING PERSONNEL				
COSTS		REMARKS		
MANPOWER	\$			
MATERIAL	\$			
TOTAL	\$			

AF FORM 451  
FEB 77

**A3.1.1. (Item 1) Date.** Enter the date that you initiate the form.

**A3.1.2. (Item 2) Priority.** Enter the supply priority and required delivery date assigned to the shipping document. If the request is not for a shipment, enter the date that you need the service.

**A3.1.3. (Item 3) Request No.** Use this block (packing and crating activities) for document control. Determine the number of copies required of AF Form 451 for local use. You should usually request at least two should remain with the item until packaging is completed. The second copy should be used for document control purposes. Document control request numbers should be assigned as requests are received. Recommend numbers be assigned in ascending sequence for 1 year, starting at the beginning of each calendar year. Document control copies are not required if a request control log is maintained. Request control logs, as a minimum, should reflect information from blocks 1, 3, 5, 9, 10, and the date completed from block 16. If a log is maintained, original copies should be filed, in request number sequence, after the packaging service is completed. If a copy is maintained for docu-

ment control purposes, it may be replaced with the original after the packaging service is completed. Analysis of completed requests will provide management information to evaluate reusable container program deficiencies and trends, and to provide a basis for corrective action.

**A3.1.4. (Item 4) To.** Enter the organization symbol or name of the packaging and crating activity.

**A3.1.5. (Item 5) From.** Enter the organization symbol or name of the activity initiating the request. If you prepare the form during the supply turn-in process, enter the symbol or name of the activity turning in the item. Do not enter the symbol or name of the supply activity unless you are shipping the item (or packaging it for storage) from supply stock. Enter the name of the person to contact for information on the request.

**A3.1.6. (Item 6) Shipping Document No.** Enter the transportation control number from accompanying documents. If the documents have no number, enter not applicable (N/A).

**A3.1.7. (Item 7) Issue Document No.** Enter the supply document number from accompanying documents. If the documents have no number, enter N/A.

**A3.1.8. (Item 8) Reason for Request.** Check the applicable block:

**A3.1.8.1. Container Destroyed by User.** Check this block when the user has disposed of a reusable container according to local procedures, and local reusable container program resources have no replacement. If the user needs a long-life container, attach a copy of the document the user submitted to supply with the unserviceable container. You may check this block for containers needed to replace containers that have deteriorated in storage.

**A3.1.8.2. Item Issued Without Proper Container.** When turning in an unserviceable repairable item, check this block when the correct SPI container was not issued with the serviceable replacement item. If the serviceable item came in another service's pack, a contractor's reusable pack, or a pack marked with an ALC deviation number in the lower right corner of the container, you may use the pack for shipment or storage.

**A3.1.8.3. Item Due-Out Replacement Not Received.** Check this block for Credit Due-In from Maintenance turn-ins when the supply or reusable container program resources don't have the SPI pack. If you check this block, write "turn-in" in block 16.

**A3.1.8.4. Initial Requirement.** Check this block when:

- Units turn in items, you can't get the containers, and replacement items came in a different SPI pack.
- No one needs a replacement item.

**A3.1.8.5. Other.** Check this block and specify the reason for the request when none of the blocks in Items 1 through 8 covers the circumstances. Examples: Handling devices, containers not available through supply, blocking and bracing, pallet repair.

**A3.1.9. (Item 9) Item Requested.** Check the applicable block to indicate the type of container required. *NOTE:* TPO Pack is now SPI Pack.

**A3.1.10. (Item 10) Specifications.** Enter the applicable information in the blocks. When you need additional room to describe the requested service, attach sufficient detail to the original AF Form 451 and write "Details attached" in the remarks block.

**A3.1.10.1. Quantity.** Enter the number of units required.

**A3.1.10.2. Unit.** Enter "each," "pieces," "bags," or any other descriptive unit of issue.

**A3.1.10.3. Spec/SPI No.** Enter the specification number or SPI number. If you don't know the SPI number, enter the item's NSN. (The packaging activity determines the SPI number required for the item and enters the number.) If the specification or SPA does not cover the required service, enter N/A.

**A3.1.10.4. NSN.** Enter the part number when you have no NSN. You may leave this block blank if you put an SPI number on the Spec/SPI No. line.

**A3.1.10.5. Nom enclature.** Enter the name of the requested item or service if you checked none of the blocks in item 9.

**A3.1.10.6. Length, Width, and Depth.** Enter the measurements of the item requested in this order.

**A3.1.11. (Item 11) Purpose.** Check the applicable block to indicate the item destinations. You need not check these blocks when you provide a complete shipping document

**A3.1.12. (Item 12) Bldg No.** Enter the building number of the requesting activity if you want the container or item when complete.

**A3.1.13. (Item 13) Phone No.** Enter the phone number of the person to contact for information on the request or to alert for pick-up when the item is complete.

**A3.1.14. (Item 14) Signature of Re requester.** Have the persons authorized to initiate AF Forms 451, as designated in local implementing regulations, sign this block.

**A3.1.15. (Item 15 ) Costs.** Complete these blocks when required by local implementing regulations.

**A3.1.16. (Item 16) Remarks.** Enter the date the service is completed, required completion date or other necessary information.

## Attachment 4

**IDENTIFYING, ORDERING, AND RECONCILING SPECIAL PACKAGING INSTRUCTIONS (SPI)****A4.1. Identifying SPIs:**

A4.1.1. The A-D035T-801-QT-L09 and A-D035T-802-QT-L09, Quarterly SPI/Stock Number Cross-Reference microfiche products, provide cross-references between SPI to Stock Number (801) and Stock Number to SPI (802). **NOTE:** These products replace A-O01338A-Q2-G68 microfiche.

A4.1.2. Only organizations that are established users receive automatic quarterly distribution of the SPI/Stock Number Cross-Reference List.

A4.1.2.1. All base packaging activities must request and use this list. Air Force base users such as maintenance shops must request copies of the list through their base transportation management officer (TMO).

A4.1.2.2. The TMO must consolidate base requirements and order enough copies of the lists to distribute to base users.

A4.1.2.3. To order the SPI/Stock Number Cross-Reference List, send requests to OO-ALC/TIDB, 5851 F AVE, HILL AFB UT 84056-5713.

**EXCEPTIONS:** Jet and reciprocating aircraft engines and some munitions. TO 00-85-20, Engine Shipping Instructions, identifies containers for engines.

**A4.2. Reconciling SPIs:**

A4.2.1. The computer for the Standard Base Supply System (SBSS) stores SPI numbers as part of the item record and prints them in-the-clear on off-base issue, due-out release, and shipment documents. SBSS receives the SPI number through the Stock Number User Directory (SNUD).

A4.2.2. The SBSS computer stores and prints SPI numbers and other packaging instructions in "*Freight Classification Nomenclature*" block of the DD Form 1348-1A. The Routing Identifier Code (RIC) of the ALC managing the SPI follows these entries.

A4.2.3. The SBSS provides the following SPI information:

**A4.2.3.1. Drawing or Narrative SPI Number.** Ten-alphanumeric positions followed by the RIC. For example, SPIF003036728FHZ.

**A4.2.3.2. Fast Pack SPI Number.** Ten alphanumeric positions. For example, the preservation and pack code (the third from last position is always an "X" preceded by the preservation code and five zeros: F000004XC1 (RIC).

**A4.2.3.3. Standard Pack SPI Number.** Ten alphanumeric positions. For example, the preservation code, simple instruction code, and container size code preceded by five zeros: F000004C01 (RIC).

**A4.2.3.4. Foam-in-Place Message.** A clear text message. For example, foam-flexible (RIC), foam-rigid (RIC), foam-semirigid (RIC).

**A4.2.3.5. Special Packaging Instruction Reconciliation List/SO2/GV847 Report.** The SBSS computer gives the Traffic Management Officer (TMO) a semiannual (or quarterly, when requested by TMO) S02 SPI reconciliation list. This list gives TMOs an inventory of SPI drawings and narrative documents necessary to provide packaging support to the bases, tenant organizations, or on-base satellite activities. The list is printed in numerical sequence by SPI number. It refers to applicable NSNs that are loaded in the SBSS stock record account (AFMAN 23-110 [formerly AFMAN 67-1, volume II, part two, chapter 5, attachment E-2]). The TMO uses this list to compare the on-hand SPI documents to those shown on the S02 listing. The TMO annotates any discrepancies (like missing SPI documents or an on-hand SPI that is not the latest revision) on the S02 list for future reference.

### **A4.3. Ordering SPIs:**

A4.3.1. After the inventory is completed, the TMO requests updated copies of SPI documents from the managing ALC. [figure a4.1.](#) lists the routing identifier codes (RIC) and the corresponding mailing and message addresses for ordering SPIs:

**Figure A4.1. RICs With Mailing and Message Addresses.**

<b>RIC</b>	<b>Mailing and Message Address</b>
FFZ	652 ABG/LGT 1961 IDZOREK RD MCCLELLAN AFB CA 95652-1620 652 ABG McClellan AFB CA//LGT//
FGZ	649 ABG/LGTPD 5851 F AVE, BLDG 89 HILL AFB UT 84056-5713 649 ABG HILL AFB UT//LGTPD//
FHZ	654 ABG/LGTPL 7701 2ND ST STE 102 TINKER AFB OK 73145-9100 654 ABG TINKER AFB OK//LGTPL//
FLZ	653 ABG/LGTP 455 BYRON ST BLDG 380 ROBINS AFB GA 31098-5999 653 ABG ROBINS AFB GA//LGTP//
FPZ	651 ABG/LGTP BLDG 1572, DOOR 1B 401 WILSON BLVD KELLY AFB TX 78241-5340 651 ABG KELLY AFB TX//LGTP//

**Attachment 5****REQUIREMENTS FOR REPORTING DISCREPANCIES**

**A5.1. Compliance With Established Packaging Requirements.** Don't issue SF 364, **Report of Discrepancy (ROD)**, against bases or ALCs when the goods aren't damaged and any of these conditions apply:

A5.1.1. Items packaged before the current SPI date are acceptable and need not be repackaged before shipment.

A5.1.2. Contractor (with deviation number) or other service packages are acceptable for reuse given a reusable rather than one-trip container.

A5.1.2.1. The managing packaging office must approve the use of a contractor pack by indicating the prime ALC and a deviation number in the lower right corner of the exterior container (for example, SM-001).

A5.1.2.2. When using a contractor pack, annotate "Contractor Pack" on the DD Form 1348-1A, **Issue Release/Receipt Document**, or the condition tag. You can recognize contractor packs recognized by the contractor data markings required by MIL-STD-129, such as the purchase or delivery order and the name and address of the contractor.

A5.1.3. The managing packaging office has approved an alternate pack and has provided a deviation number.

A5.1.4. You are using the next larger size of fast pack container for shipments with Uniform Materiel Movement and Issue Priority System (UMMIPS) priority 01-08 because you don't have the required Type I (Vertical) or Type II (Slide) container. Issue SF 364 if you use the next larger size fast pack for lower priority shipments.

A5.1.5. You are using larger standard pack containers for shipment of unserviceable items when you don't have the correct size.

**A5.2. When to Complete SF 364.** Complete SF 364 if the items get damaged and the total cost to correct exceeds \$50 or if you find any of these deficiencies, regardless of the cost to correct:

A5.2.1. Repetitive deficiencies by a particular activity or repetitive damage found on receipt.

A5.2.2. Any deficiencies in packaging involving ammunition, explosives, or other hazardous materials.

A5.2.3. Packaging deficiencies resulting in damaged material that may endanger life or impair combat or deployment operations.

**Attachment 6****AIR FORCE PACKAGING EVALUATION ACTIVITY (AFPEA) CHARTER**

**A6.1. Mission of the AFPEA .** The AFPEA provides the Department of the Air Force and other DoD activities with packaging engineering capabilities that include materials engineering, testing and in-house container design. These capabilities are available to all MAJCOMs and to certain other Federal agencies. To assure dynamic engineering and technical progress in packaging, the AFPEA investigates designs, develops, tests, and evaluates packaging materials, containers, methods, and techniques. For assistance, contact AFPEA at HQ AFMC/LGTP, 5215 Thurlow St., Wright-Patterson AFB OH 45433-5540, DSN 787-2638, Comm: 513-257-2638, DSN FAX: 787-0231, Comm Fax: 513-257-0231.

**A6.2. Responsibilities:****A6.2.1. HQ USAF:**

- Establishes the mission and responsibilities of AFPEA.
- Provides policy, direction, and guidance to assure that personnel use the packaging engineering facilities, resources, and functions of AFPEA in the best interests of the Air Force.

**A6.2.2. Major Commands:**

- Ensure that personnel forward problems and requirements for packaging, container design, and container engineering services and support to AFPEA.
- Reduce overall project costs by using AFPEA for container engineering, design, fabrication, testing and evaluation instead of contracting the work out.
- Ensure that personnel and activities don't unnecessarily duplicate available AFPEA capability and equipment.
- Get AFPEA approval before obtaining test equipment, using new packaging materials not yet approved for Air Force use, implementing new container design concepts, or introducing new packaging techniques for protecting items entering the Air Force inventory.
- Report all requirements for new packaging materials and processes to AFPEA. Identify any problems related to standard preservation and packaging materials and their application for items entering the Air Force inventory.
- Give AFPEA packaging information developed within the command. Include copies of developmental studies and reports received from contract or military user sources.
- Give AFPEA data concerning benefits that result from AFPEA assistance.
- Participate and assist AFPEA in the field and service testing of new materials, equipment, procedures, and container design concepts.

**A6.2.3. Air Force Materiel Command (AFMC):**

- Manages and directs AFPEA consistent with AFPD 24-2 and this instruction.
- Provides personnel, funding, and facilities necessary to accomplish the AFPEA mission.

**A6.2.4. AFPEA:**

- Investigates, designs, develops, tests, and evaluates preservation, packaging, and packing materials, containers, methods, systems, and techniques. Uses contract support when necessary and cost effective.
- Serves as custodian, review user, or preparing activity for any assigned military and industry standardization documents and technical orders that directly relate to packaging materials, containers, or processes.
- Considers environmental impacts, Occupational Safety and Health Act (OSHA) requirements, distribution environments, and costs in performing packaging standardization, engineering projects, and studies.
- Provides packaging engineering and technical guidance, direction, and support to Air Force and other DoD activities, on request.
- Assigns an identification number, priority, and target completion date for each project.
- Provides project findings and recommendations to the project initiator in a timely manner to ensure that the project meets established requirements.
- Provides HQ USAF/LGT, major commands, and other services a copy of the annual (calendar year) summary of AFPEA accomplishments of the previous year and goals for the upcoming year. This annual summary (AFMC Pamphlet 71-7) is available through the Publications Distribution Office (PDO).
- Coordinates project efforts with other activities having management or technical involvement.
- Reviews and coordinates requests from Air Force activities for equipment to support in-house packaging test, evaluation, or development.
- Establishes and maintains channels for the effective exchange of information within Air Force activities, other military departments, Government agencies, and industrial organizations. Conducts technical seminars for exchanging data on new developments and requirements.
- Establishes and maintains centralized technical packaging information files of packaging drawings, studies, and related scientific and engineering data.
- Provides management and technical guidance and support to the illustrators at the Air Logistics Center (ALC) on the computer-aided design systems (CADS) and special packing instructions (SPI). Serves as the central repository for all computer-generated SPIs.

**A6.3. Procedures for Establishing an AFPEA Project.** Requests for packaging, engineering and technical assistance from AFPEA must include enough background information and justification to permit assigning the appropriate priority. Mail requests to HQ AFMC/LGTP, 5215 Thurlow St, Wright-Patterson AFB, OH 45433-5540. Include:

- Title of the project.
- Point of contact at the requesting activity.
- Definition of the problem, the technical factors that contribute to the problem, and other pertinent background information.
- List of requirements to be met and a description of activities that are affected by these requirements.

- Suggested priority for the project, with explanation when appropriate.
- Date the project must finish if needed to meet operational requirement.
- Other comments having a bearing on the project.

**A6.4. Contacts.** AFPEA recommends and encourages preliminary contact to ensure a mutual understanding of project requirements.

A6.4.1. Requesters may contact:

- The Container Design and Engineering section at HQ AFMC/LGTPD, DSN 787-3362.
- The Materials Engineering and Testing section at HQ AFMC/LGTPM, DSN 787-4519.

A6.4.2. Follow up on verbal requests in writing within 10 days

A6.4.3. You may also submit requests containing the same information through other channels such as the suggestion program, technical order change procedures, the standardization program, and the packaging improvement program.

## Attachment 7

## CONTAINER STANDARDIZATION MASTER LIST

Table A7.1. Container Standardization Master List.

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
01	4.0 X 4.0 X 4.0	4.3 X 4.3 X 4.5	0.048
0.25	(10.16 X 10.16 X 10.16)	(10.92 X 10.92 X 11.43)	(0.00144)
(0.1125)	8115-00-265-7059		
02	4.0 x 4.0 x 12.0	4.3 x 4.3 x 12.5	0.134
0.74	(10.16 x 10.16 x 30.48)	(10.92 x 10.92 x 31.75)	(0.00402)
(0.333)	8115-00-418-4660		
03	4.0 x 4.0 x 16.0	4.3 x 4.3 x 16.5	0.177
0.72	(10.16 x 10.16 x 40.64)	(10.92 x 10.92 x 41.91)	(0.00531)
(0.324)	8115-00-200-6954		
04	5.0 x 5.0 x 20.0	5.3 x 5.3 x 20.5	0.333
0.88	(12.7 x 12.7 x 50.8)	(13.46 x 13.46 x 52.07)	(0.00999)
(0.396)	8115-00-030-3532		
05	6.0 x 4.0 x 8.0	6.3 x 4.3 x 8.5	0.133
0.45	(15.24 x 10.16 x 20.32)	(16.0 x 10.92 x 21.59)	(0.0040)
(0.2025)	8115-00-190-4888		
06	6.0 x 6.0 x 6.0	6.3 x 6.3 x 6.5	0.149
0.52	(15.24 x 15.24 x 15.24)	(16.0 x 16.0 x 16.51)	(0.00447)
(0.234)	8115-00-183-9503		
07	6.0 x 6.0 x 10.0	6.3 x 6.3 x 10.5	0.241
0.68	(15.24 x 15.24 x 25.4)	(16.0 x 16.0 x 26.67)	(0.00723)
(0.306)	8115-00-417-9440		

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
08	6.0 x 6.0 x 15.0	6.3 x 6.3 x 15.5	0.356
0.88	(15.24 x 15.24 x 38.1)	(16.0 x 16.0 x 39.37)	(0.01068)
(0.396)	8115-01-166-6458		
09	6.0 x 6.0 x 18.0	6.3 x 6.3 x 18.5	0.425
1.00	(15.24 x 15.24 x 45.72)	(16.0 x 16.0 x 46.99)	(0.01275)
(0.45)	8115-00-190-4920		
10	6.0 x 6.0 x 24.0	6.3 x 6.3 x 24.5	0.563
1.25	(15.24 x 15.24 x 60.96)	(16.0 x 16.0 x 62.23)	(0.01689)
(0.5625)	8115-00-190-4920		
11	8.0 x 4.0 x 4.0	8.3 x 4.3 x 4.5	0.093
0.38	(20.32 x 10.16 x 10.16)	(21.08 x 10.92 x 11.43)	(0.00279)
(0.171)	8115-00-183-9500		
12	8.0 x 8.0 x 4.0	8.3 x 8.3 x 4.5	0.179
0.60	(20.32 x 20.32 x 10.16)	(21.08 x 21.08 x 11.43)	(0.00537)
(0.27)	8115-00-281-3878		
13	8.0 x 8.0 x 8.0	8.3 x 8.3 x 8.5	0.339
0.90	(20.32 x 20.32 x 20.32)	(21.08 x 21.08 x 21.59)	(0.01017)
(0.405)	8115-00-183-9498		
14	8.0 x 8.0 x 10.0	8.3 x 8.3 x 10.5	0.149
1.02	(20.32 x 20.32 x 25.4)	(21.08 x 21.08 x 26.67)	(0.00447)
(0.459)	8115-00-183-9499		
15	8.0 x 8.0 x 12.0	8.3 x 8.3 x 12.5	0.498
1.12	(20.32 x 20.32 x 30.48)	(21.08 x 21.08 x 31.75)	(0.01494)
(0.504)	8115-00-281-3882		

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
16	8.0 x 8.0 x 14.0	8.3 x 8.3 x 14.5	0.578
1.25	(20.32 x 20.32 x 35.56)	(21.08 x 21.08 x 36.83)	(0.01734)
(0.5625)	8115-01-166-6459		
17	8.0 x 8.0 x 16.0	8.3 x 8.3 x 16.5	0.658
1.35	(20.32 x 20.32 x 40.64)	(21.08 x 21.08 x 41.91)	(0.01974)
(0.6075)	8115-00-190-4936		
18	8.0 x 8.0 x 24.0	8.3 x 8.3 x 24.5	0.977
1.80	(20.32 x 20.32 x 60.96)	(21.08 x 21.08 x 62.23)	(0.02931)
(0.81)	8115-00-417-9442		
19	9.0 x 6.0 x 6.0	9.3 x 6.3 x 6.5	0.220
0.66	(22.86 x 15.24 x 15.24)	(23.62 x 16.0 x 16.51)	(0.0066)
(0.297)	8115-00-190-4950		
20	9.0 x 6.0 x 18.0	9.3 x 6.3 x 18.5	0.627
1.50	(22.86 x 15.24 x 45.72)	(23.62 x 16.0 x 46.99)	(0.01881)
(0.675)	8115-01-029-6777		
21	9.0 x 9.0 x 9.0	9.3 x 9.3 x 9.5	0.476
1.15	(22.86 x 22.86 x 22.86)	(23.62 x 23.62 x 24.13)	(0.01428)
(0.5175)	8115-01-166-6460		
22	10.0 x 6.0 x 4.0	10.5 x 6.3 x 4.5	0.172
0.60	(25.4 x 15.24 x 10.16)	(26.67 x 16.0 x 11.43)	(0.00516)
(0.27)	8115-00-183-9496		
23	10.0 x 6.0 x 10.0	10.5 x 6.3 x 10.5	0.402
0.85	(25.4 x 15.24 x 25.4)	(26.67 x 16.0 x 26.67)	(0.01206)
(0.3825)	8115-00-255-1341		
24	10.0 x 8.0 x 6.0	10.5 x 8.3 x 6.5	0.328

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
0.90	(25.4 x 20.32 x 15.24)	(26.67 x 21.08 x 16.51)	(0.00984)
(0.405)	8115-00-183-9497		
25	10.0 x 10.0 x 8.0	10.5 x 10.5 x 8.5	0.542
1.26	(25.4 x 25.4 x 20.32)	(26.67 x 26.67 x 21.59)	(0.01626)
(0.567)	8115-00-183-9494		
26	10.0 x 10.0 x 10.0	10.5 x 10.5 x 10.5	0.670
1.40	(25.4 x 25.4 x 25.4)	(26.67 x 26.67 x 26.67)	(0.0201)
(0.63)	8115-00-190-4959		
27	10.0 x 10.0 x 12.0	10.5 x 10.5 x 12.5	0.798
1.50	(25.4 x 25.4 x 30.48)	(26.67 x 26.67 x 31.75)	(0.02394)
(0.675)	8115-01-034-0370		
28	11.0 x 11.0 x 11.0	11.5 x 11.5 x 11.5	0.880
1.70	(27.94 x 27.94 x 27.94)	(29.21 x 29.21 x 29.21)	(0.0264)
(0.765)	8115-00-417-9406		
29	11.25 x 8.75 x 4.0	11.5 x 9.0 x 4.5	0.270
0.92	(28.58 x 22.23 x 10.16)	(29.21 x 22.86 x 11.43)	(0.0081)
(0.414)	8115-01-012-5003		
30	11.25 x 8.75 x 18.0	11.5 x 9.0 x 18.5	1.108
1.86	(28.58 x 22.23 x 45.72)	(29.21 x 22.86 x 46.99)	(0.03324)
(0.837)	8115-00-190-4969		
31	12.0 x 6.0 x 6.0	12.5 x 6.3 x 6.5	0.296
0.78	(30.48 x 15.24 x 15.24)	(31.75 x 16.0 x 16.51)	(0.0089)
(0.351)	8115-00-183-9492		
32	12.0 x 6.0 x 12.0	12.5 x 6.3 x 12.5	0.570
1.25	(30.48 x 15.24 x 30.48)	(31.75 x 16.0 x 31.75)	(0.0171)

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
(0.5625)	8115-00-190-4974		
33	12.0 x 6.0 x 15.0	12.5 x 6.3 x 15.5	0.706
1.32	(30.48 x 15.24 x 38.1)	(31.75 x 16.0 x 39.37)	(0.0212)
(0.594)	8115-00-417-9380		
34	12.0 x 9.0 x 6.0	12.5 x 9.3 x 6.5	0.437
1.10	(30.48 x 22.86 x 15.24)	(31.75 x 23.62 x 16.51)	(0.0131)
(0.495)	8115-01-011-3626		
35	12.0 x 9.5 x 9.5	12.5 x 10.0 x 10.0	0.723
1.40	(30.48 x 24.13 x 24.13)	(31.75 x 25.4 x 25.4)	(0.0217)
(0.63)	8115-00-132-9531		
36	12.0 x 12.0 x 4.0	12.5 x 12.5 x 4.5	0.407
1.35	(30.48 x 30.48 x 10.16)	(31.75 x 31.75 x 11.43)	(0.0122)
(0.6075)	8115-00-190-4860		
37	12.0 x 12.0 x 8.0	12.5 x 12.5 x 8.5	0.769
1.50	(30.48 x 30.48 x 20.32)	(31.75 x 31.75 x 21.59)	(0.0231)
(0.675)	8115-00-417-9378		
38	12.0 x 12.0 x 10.0	12.5 x 12.5 x 10.5	0.949
1.81	(30.48 x 30.48 x 25.4)	(31.75 x 31.75 x 26.67)	(0.0285)
(0.8145)	8115-00-183-9490		
39	12.0 x 12.0 x 12.0	12.5 x 12.5 x 12.5	1.131
1.97	(30.48 x 30.48 x 30.48)	(31.75 x 31.75 x 31.75)	(0.0339)
(0.8865)	8115-00-183-9491		
40	12.0 x 12.0 x 14.0	12.5 x 12.5 x 14.5	1.311
2.14	(30.48 x 30.48 x 35.56)	(31.75 x 31.75 x 36.83)	(0.0393)
(0.963)	8115-00-409-3807		

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
41	13.0 x 13.0 x 13.0	13.5 x 13.5 x 13.5	1.424
2.48	(33.02 x 33.02 x 33.02)	(34.29 x 34.29 x 34.29)	(0.04272)
(1.116)	8115-01-166-6461		
42	14.0 x 10.0 x 6.0	14.5 x 10.5 x 6.5	0.573
1.35	(35.56 x 25.4 x 15.24)	(36.83 x 26.67 x 16.51)	(0.01719)
(0.6075)	8115-00-495-5458		
43	14.0 x 10.0 x 10.0	14.5 x 10.5 x 10.5	0.925
1.68	(35.56 x 25.4 x 25.4)	(36.83 x 26.67 x 26.67)	(0.02775)
(0.756)	8115-01-030-353744		
44	14.0 x 12.0 x 8.0	14.5 x 12.5 x 8.5	0.892
1.80	(35.56 x 30.48 x 20.32)	(36.83 x 31.75 x 21.59)	(0.02676)
(0.81)	8115-00-183-9488		
45	14.0 x 14.0 x 12.0	14.5 x 14.5 x 12.5	1.521
2.22	(35.56 x 35.56 x 30.48)	(36.83 x 36.83 x 31.75)	(0.04563)
(0.999)	8115-00-183-9489		
46	14.0 x 14.0 x 14.0	14.5 x 14.5 x 14.5	1.764
2.68	(35.56 x 35.56 x 35.56)	(36.83 x 36.83 x 36.83)	(0.05292)
(1.206)	8115-00-417-9321		
47	14.0 x 14.0 x 16.0	14.5 x 14.5 x 16.5	2.008
2.75	(35.56 x 35.56 x 40.64)	(36.83 x 36.83 x 41.91)	(0.06024)
(1.2375)	8115-00-585-4906		
48	14.0 x 14.0 x 18.0	14.5 x 14.5 x 18.5	2.251
3.00	(35.56 x 35.56 x 45.72)	(36.83 x 36.83 x 46.99)	(0.06753)
(1.35)	8115-00-417-9320		

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
49	15.0 x 15.0 x 10.0	15.5 x 15.5 x 10.5	1.460
2.55	(38.1 x 38.1 x 25.4)	(39.37 x 39.37 x 26.67)	(0.0438)
(1.1475)	8115-00-417-9318		
50	16.0 x 10.0 x 10.0	16.5 x 10.5 x 10.5	1.053
1.80	(40.64 x 25.4 x 25.4)	(41.91 x 26.67 x 26.67)	(0.03159)
(0.81)	8115-01-030-4249		
51	16.0 x 12.0 x 8.0	16.5 x 12.5 x 8.5	1.145
1.93	(40.64 x 30.48 x 20.32)	(41.91 x 31.75 x 21.59)	(0.03435)
(0.8685)	8115-00-183-9487		
52	16.0 x 12.0 x 12.0	16.5 x 12.5 x 12.5	1.492
2.28	(40.64 x 30.48 x 30.48)	(41.91 x 31.75 x 31.75)	(0.04476)
(1.026)	8115-00-418-4653		
53	16.0 x 16.0 x 12.0	16.5 x 16.5 x 12.5	1.970
3.09	(40.64 x 40.64 x 30.48)	(41.91 x 41.91 x 31.75)	(0.0591)
(1.3905)	8115-00-451-7853		
54	16.0 x 16.0 x 16.0	16.5 x 16.5 x 16.5	2.60
3.50	(40.64 x 40.64 x 40.64)	(41.91 x 41.91 x 41.91)	(0.078)
(1.575)	8115-00-190-5002		
55	18.0 x 12.0 x 12.0	18.5 x 12.5 x 12.5	1.673
2.50	(45.72 x 30.48 x 30.48)	(46.99 x 31.75 x 31.75)	(0.05019)
(1.125)	8115-00-514-2409		
56	18.0 x 15.0 x 10.0	18.5 x 15.5 x 10.5	1.742
2.81	(45.72 x 38.1 x 25.4)	(46.99 x 39.37 x 26.67)	(0.05226)
(1.2645)	8115-00-190-5007		
57	18.0 x 15.0 x 15.0	18.5 x 15.5 x 15.5	2.572

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
3.34	(45.72 x 38.1 x 38.1)	(46.99 x 39.37 x 39.37)	(0.07716)
(1.503)	8115-00-417-9292		
58	18.0 x 18.0 x 12.0	18.5 x 18.5 x 12.5	2.476
3.64	(45.72 x 45.72 x 30.48)	(46.99 x 46.99 x 31.75)	(0.07428)
(1.638)	8115-00-183-9482		
59	18.0 x 18.0 x 18.0	18.5 x 18.5 x 18.5	3.664
4.38	(45.72 x 45.72 x 45.72)	(46.99 x 46.99 x 46.99)	(0.10992)
(1.971)	8115-00-428-4185		
60	20.0 x 10.0 x 10.0	20.5 x 10.5 x 10.5	1.308
2.05	(50.8 x 25.4 x 25.4)	(52.07 x 26.67 x 26.67)	(0.03924)
(0.9225)	8115-01-166-6462		
61	20.0 x 12.0 x 12.0	20.5 x 12.5 x 12.5	1.854
2.60	(50.8 x 30.48 x 30.48)	(52.07 x 31.75 x 31.75)	(0.05562)
(1.17)	8115-01-008-3645		
62	20.0 x 16.0 x 16.0	20.5 x 16.5 x 16.5	3.230
3.90	(50.8 x 40.64 x 40.64)	(52.07 x 41.91 x 41.91)	(0.0969)
(1.755)	8115-00-275-5777		
63	20.0 x 20.0 x 6.0	20.5 x 20.5 x 6.5	1.581
3.53	(50.8 x 50.8 x 15.24)	(52.07 x 52.07 x 16.51)	(0.04743)
(1.5885)	8115-00-417-9253		
64	20.0 x 20.0 x 12.0	20.5 x 20.5 x 12.5	3.040
4.30	(50.8 x 50.8 x 30.48)	(52.07 x 52.07 x 31.75)	(0.0912)
(1.935)	8115-00-428-4183		
65	20.0 x 20.0 x 20.0	20.5 x 20.5 x 20.5	4.986
5.35	(50.8 x 50.8 x 50.8)	(52.07 x 52.07 x 52.07)	(0.14958)

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
(2.4075)	8115-00-428-4158		
66	22.0 x 22.0 x 12.0	22.5 x 22.5 x 12.5	3.662
5.00	(55.88 x 55.88 x 30.48)	(57.15 x 57.15 x 31.75)	(0.10986)
(2.25)	8115-00-428-4145		
67	24.0 x 12.0 x 12.0	24.5 x 12.5 x 12.5	2.215
2.90	(60.96 x 30.48 x 30.48)	(62.23 x 31.75 x 31.75)	(0.06645)
(1.305)	8115-01-166-6464		
68	24.0 x 14.0 x 14.0	24.5 x 14.5 x 14.5	2.981
3.60	(60.96 x 35.56 x 35.56)	(62.23 x 36.83 x 36.83)	(0.08943)
(1.62)	8115-01-071-2972		
69	24.0 x 16.0 x 12.0	24.5 x 16.5 x 12.5	2.924
3.80	(60.96 x 40.64 x 30.48)	(62.23 x 41.91 x 31.75)	(0.08772)
(1.71)	8115-00-183-9481		
70	24.0 x 16.0 x 16.0	24.5 x 16.5 x 16.5	3.860
4.32	(60.96 x 40.64 x 40.64)	(62.23 x 41.91 x 41.91)	(0.1158)
(1.944)	8115-00-292-0123		
71	24.0 x 18.0 x 18.0	24.5 x 18.5 x 18.5	4.853
5.00	(60.96 x 45.72 x 45.72)	(62.23 x 46.99 x 46.99)	(0.14559)
(2.25)	8115-01-163-9189		
72	24.0 x 20.0 x 16.0	24.5 x 20.5 x 16.5	4.796
5.30	(60.96 x 50.8 x 40.64)	(62.23 x 52.07 x 41.91)	(0.14388)
(2.385)	8115-00-417-9236		
73	24.0 x 24.0 x 10.0	24.5 x 24.5 x 10.5	3.647
5.45	(60.96 x 60.96 x 25.4)	(62.23 x 62.23 x 26.67)	(0.10941)
(2.4525)	8115-00-428-4124		

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
74	24.0 x 24.0 x 12.0	24.5 x 24.5 x 12.5	4.342
5.75	(60.96 x 60.96 x 30.48)	(62.23 x 62.23 x 31.75)	(0.13026)
(2.5875)	8115-00-174-2354		
75	24.0 x 24.0 x 16.0	24.5 x 24.5 x 16.5	5.732
6.05	(60.96 x 60.96 x 40.64)	(62.23 x 62.23 x 41.91)	(0.17196)
(2.7225)	8115-01-119-2523		
76	24.0 x 24.0 x 20.0	24.5 x 24.5 x 20.5	7.121
6.70	(60.96 x 60.96 x 50.8)	(62.23 x 62.23 x 52.07)	(0.21363)
(3.05)	8115-01-166-6451		
77	24.0 x 24.0 x 24.0	24.5 x 24.5 x 24.5	8.511
7.62	(60.96 x 60.96 x 60.96)	(62.23 x 62.23 x 62.23)	(0.25533)
(3.429)	8115-00-417-9416		
78	26.0 x 12.0 x 8.0	26.5 x 12.5 x 8.5	1.629
3.00	(66.04 x 30.48 x 20.32)	(67.31 x 31.75 x 21.59)	(0.04887)
(1.35)	8115-01-166-6450		
79	26.0 x 12.0 x 10.0	26.5 x 12.5 x 10.5	2.013
3.30	(66.04 x 30.48 x 25.4)	(67.31 x 31.75 x 26.67)	(0.06039)
(1.485)	8115-01-166-6449		
80	26.0 x 18.0 x 18.0	26.5 x 18.5 x 18.5	5.249
5.50	(66.04 x 45.72 x 45.72)	(67.31 x 46.99 x 46.99)	(0.15747)
(2.475)	8115-01-166-6454		
81	26.0 x 26.0 x 20.0	26.5 x 26.5 x 20.5	8.331
7.00	(66.04 x 66.04 x 50.8)	(67.31 x 67.31 x 52.07)	(0.2499)
(3.15)	8115-01-166-6463		

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
82	29.0 x 14.0 x 14.0	29.5 x 14.5 x 14.5	3.589
4.00	(73.66 x 35.56 x 35.56)	(74.93 x 36.83 x 36.83)	(0.1077)
(1.8)	8115-01-166-6447		
83	30.0 x 12.0 x 6.0	30.5 x 12.5 x 6.5	1.434
2.61	(76.2 x 30.48 x 15.24)	(77.47 x 31.75 x 16.51)	(0.04302)
(1.1745)	8115-00-190-5017		
84	30.0 x 12.0 x 12.0	30.5 x 12.5 x 12.5	2.758
3.50	(76.2 x 30.48 x 30.48)	(77.47 x 31.75 x 31.75)	(0.08274)
(1.575)	8115-01-166-6448		
85	30.0 x 16.0 x 16.0	30.5 x 16.5 x 16.5	4.805
5.00	(76.2 x 40.64 x 40.64)	(77.47 x 41.91 x 41.91)	(0.1442)
(2.25)	8115-00-292-0120		
86	30.0 x 20.0 x 12.0	30.5 x 20.5 x 12.5	4.523
4.80	(76.2 x 50.8 x 30.48)	(77.47 x 52.07 x 31.75)	(0.1357)
(2.16)	8115-01-163-3446		
87	30.0 x 20.0 x 20.0	30.5 x 20.5 x 20.5	7.418
6.50	(76.2 x 50.8 x 50.8)	(77.47 x 52.07 x 52.07)	(0.2225)
(2.925)	8115-01-163-3447		
88	30.0 x 26.0 x 20.0	30.5 x 26.5 x 20.5	9.589
7.10	(76.2 x 66.04 x 50.8)	(77.47 x 67.31 x 52.07)	(0.2877)
(3.195)	8115-01-163-3448		
89	32.0 x 26.0 x 16.0	32.5 x 26.5 x 16.5	8.224
6.85	(81.28 x 66.04 x 40.64)	(82.55 x 67.31 x 41.91)	(0.2467)
(3.0825)	8115-01-163-9188		
90	32.0 x 26.0 x 26.0	32.5 x 26.5 x 26.5	13.208

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
7.60	(81.28 x 66.04 x 66.04)	(82.55 x 67.31 x 67.31)	(0.3962)
(3.42)	8115-01-163-3449		
91	34.0 x 14.0 x 10.0	34.5 x 14.5 x 10.5	2.895
3.75	(86.36 x 35.56 x 25.4)	(87.63 x 36.83 x 26.67)	(0.08685)
(1.6875)	8115-00-564-8053		
92	34.0 x 20.0 x 15.0	34.5 x 20.5 x 15.5	6.344
6.00	(86.36 x 50.8 x 38.1)	(87.63 x 52.07 x 39.37)	(0.19032)
(2.7)	8115-01-166-6455		
93	34.0 x 20.0 x 20.0	34.5 x 20.5 x 20.5	8.390
6.50	(86.36 x 50.8 x 50.8)	(87.63 x 52.07 x 52.07)	(0.2517)
(2.925)	8115-01-166-6456		
94	36.0 x 12.0 x 12.0	36.5 x 12.5 x 12.5	3.30
3.82	(91.44 x 30.48 x 30.48)	(92.71 x 31.75 x 31.75)	(0.099)
(1.719)	8115-01-166-6457		
95	36.0 x 14.0 x 14.0	36.5 x 14.5 x 14.5	
4.70	(91.44 x 35.56 x 35.56)	(92.71 x 36.83 x 36.83)	(0.13323)
(2.115)	8115-00-190-5020		
96	36.0 x 24.0 x 22.0	36.5 x 24.5 x 22.5	11.644
7.20	(91.44 x 60.96 x 55.88)	(92.71 x 62.23 x 57.15)	(0.34932)
(3.24)	8115-01-166-5118		
97	36.0 x 26.0 x 18.0	36.5 x 26.5 x 18.5	10.355
6.80	(91.44 x 66.04 x 45.72)	(92.71 x 67.31 x 46.99)	(0.3107)
(3.06)	8115-01-166-6453		
98	40.0 x 14.0 x 14.0	40.5 x 14.5 x 14.5	4.928
6.00	(101.6 x 35.56 x 35.56)	(102.87 x 36.83 x 36.83)	(0.1478)

CONT.SIZE CODE	CONTAINER SIZE ID	CONTAINER SIZE OD	CUBE OD
CONT. WT. lbs	in	in	cu ft
(kg)	(cm)	(cm)	(cu m)
	NSN		
(2.7)	8115-01-166-6452		

**Attachment 8****INTERROGATING THE HAZARDOUS MATERIAL TRANSPORTATION DATA SYSTEM**

**A8.1.** Packaging offices at each Air Logistics Center maintain transportation data sheets for all Air Force hazardous items they manage. Interrogate the data system by giving:

- National Item Identification Number (NIIN).
- Specification.
- Storage code.
- National Institute for Occupational Safety and Health (NIOSH) code.
- Hazard class for each mode of transportation.
- Proper name.
- Part number.

**A8.2.** The Hazardous Material Information System (HMIS) is a repository of material safety data sheets (MSDS), transportation, label, and disposal information. HMIS assists Federal government personnel who handle, store, transport, use or dispose of hazardous materials. Copies of the HMIS are available in computer disk format at:

- Packaging and Transportation.
- Ground Safety.
- Bioenvironmental Engineering.

**A8.3.** Determine DoD-authorized Performance Oriented Packaging (POP) containers by using the DoD POP database (DoD PC POP). If you are a first-time user, sign up for access by contacting DLA/MMDOS, Cameron Station VA 22304-6100, DSN: 284-6266.

**A8.4.** The focal point for Material Safety Data Sheets (MSDS) is the USAF Occupational and Environmental Health Laboratory AL/OEMB, 2402 East Dr, Brooks AFB TX 78235-5114, DSN: 240-3214.

**A8.5.** The focal point for hazardous materials transportation and packing is HQ AFMC/LGTP, Wright-Patterson AFB, OH 45433, DSN: 787-4503.